Possible influence of the OHS sector on ISO standardization

KAN Report 34e

Provisional version

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Contents

About this report

The Commission for Occupational Health and Safety and Standardization (KAN) was founded in 1994 to assert German interests in OH&S matters, especially with regard to European standardization. KAN is composed of representatives of the social partners (employers, employees), the state (national and regional governments), the Federation of institutions for statutory accident insurance and prevention (HVBG) and the German Standards Institute (DIN). One of KAN's tasks is to pool public interests in the field of occupational health and safety and to exert influence on current and future standardization projects by issuing comments on specific subjects.

KAN procures studies and expert opinions in order to analyse occupational health and safety aspects in standardization and to reveal deficiencies or erroneous developments in standardization work.

Background

Technical standards are increasingly being developed at international level. International agreements are reinforcing this development, with the result that both the European and German bodies of standards are increasingly the result of international activity. The development also affects standards of relevance to occupational health and safety. It is therefore as important as ever that OH&S representatives bring their influence to bear upon the standards development work of ISO, effectively and at an early stage if at all possible.

For this reason, KAN has commissioned a study into the possible influence of the OH&S sector on the ISO standards development process. The study describes the procedures for standards development work at ISO, including its interaction with European and national standards development. It also describes the instruments available for influencing ISO's standards development activity, and identifies the ISO committees of particular interest to occupational health and safety.

Purpose of the study

The purpose of the study was to create a basis by which occupational health and safety representatives may exert a greater influence upon international standards development.

For this reason, the study was to present the procedures of international standards development in an easily understandable form, beginning with the decision to launch a project, through to completion and subsequent revision. One focus of the study was to be the interaction with the procedures of European and national standards development (e.g. parallel voting under the overall control of CEN or ISO, and direct adoption of existing international standards).

The resulting description served to identify the points in the procedures at which occupational health and safety stakeholders could in principle exert influence. The conditions under which this is possible and the necessary approaches were to be described.

The occupational health and safety experts directly and indirectly involved are crucial to the representation of OH&S interests in international standards development. The study was therefore to serve as the basis for a survey of the German and other European OH&S representatives involved in ISO standards development activity. The first step entailed identification of the areas of ISO standards development which are of particular relevance to occupational health and safety.

KAN thanks the author for conducting the project and presenting the report, and the following experts for their supporting the project and its evaluation:

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Summary

International Standards

International Standards are globally accepted technical rules which have been developed voluntarily in the framework of a worldwide network of technical bodies and experts. The National Standards Bodies (NSBs) are involved in this network, being central points of communication and providers of national points of view. In cooperation with the Central Secretariats of the relevant international organizations ISO and IEC, the national bodies also carry out a large proportion of the technical work. In particular, they assume responsibility for the secretariats of technical committees.

International Standards deal with a large variety of topics, ranging from technical product specifications, through measuring and testing procedures and communication tools, to management systems. They may be used directly as reference documents for commercial transactions, for supporting technical requirements in the framework of governmental agreements, or, in particular, as a basis for national or regional standards. Under the Vienna and Dresden Agreements, many International Standards are transposed without change into the body of European Standards, where they implicitly become relevant for certain areas of European legislation. This is particularly the case within the scope of the EU Directives in accordance with the New Approach governing access to the Internal Market.

In view of these facts, the question arises as to what influence a specific technical area (within this study: occupational health and safety, OHS) might have on international standardization, and how this influence can be exploited and improved. Which technical aspects should be submitted when, where, and by what means, in order to ensure that the responsible bodies deal seriously with the matter? The present study attempts to give an answer regarding the possible influence of the occupational health and safety sector on international standardization. The following clauses of the summary also concentrate on this point.

Formal ISO rules

Efficient mechanisms for possible influence first necessitate an overview of the formal rules of ISO. This aspect is dealt with in the first part of the study. Familiarity with the ISO technical bodies and their composition is important, but the procedures within the various stages of work are also of particular interest. Knowledge is also required of the different types of document, the decision processes, the rules for European and international cooperation within the framework of the Vienna Agreement, and the rules for presentation and for the adoption of International Standards in national and regional form.

With the exception of special cases – e.g. preliminary stage or fast track procedures – ISO International Standards always proceed in the same way. Approval of the new work item proposal (NP) is followed by preparation of a working draft (WD) within the working group, the consensus-finding process on the committee draft (CD) within the technical committee, the enquiry on the draft International Standard (DIS) submitted to all ISO member bodies, followed by formal approval of the final draft International Standard (FDIS) and subsequent publication of the ISO Standard.

Some of the important document types relevant during the development of standards (i.e. new work item proposal, working draft, committee draft, draft International Standard, and final draft International Standard) have just been mentioned. Besides the ISO Standards there are, however, several prenormative or informative working results of ISO, namely the Technical Specification (TS), the Publicly Available Specification (PAS), the Workshop Agreement (IWA), the Guide, and the Technical Report (TR). The common feature of these documents is that they are either intended to be used on an experimental basis and subsequently, in the case of positive results, transferred

into ISO Standards, or that they provide information on standardization work of public interest.

Due to the progress of the European Union and, in particular, since the implementation of the New Approach for Standards and Technical Harmonization, the need has arisen for very close cooperation between the European and international levels. The Vienna Agreement between ISO and CEN makes provision for various specific measures of cooperation, from mutual information and mutual participation of delegations in meetings of technical committees, to the transfer of complete standards projects from one level to the other, followed by parallel voting on the working result at both levels, with the aim of approving identical International and European Standards.

In this situation, it is of great advantage that the rules of presentation of International and European Standards are the same (the European rules have in fact been derived from the international rules by means of adoption with modifications). Thus in both directions of possible transfer, no need exists for extensive editorial changes. A similar situation exists for the international rules for the adoption of International Standards as national or regional standards. The relevant ISO/IEC Guide covers all possibilities (identical adoption, adoption with modifications, translation, etc.) not only for national but also for regional (thus covering European) adoption.

Communication routes, events, and partners to be addressed

Although knowledge of the formal rules is a precondition for successful action, it does not yet answer the questions of when (i.e. at which project stage) a proposal should be put forward, where (i.e. in which body or to whom) this should be done, and which communication routes should be used.

In theory, occupational health and safety may be an item of discussion at General Assembly level, within Council, the TMB, the TCs and their WGs, down to the editing committees level. Questions, aspects, and not least possible decisions will be quite different in nature at the various levels. It is therefore important that the right proposal be presented at the right time at the right level.

This problem is addressed in the second part of this study. There, the possible communication routes are referred to (in particular through the national ISO member body, and for certain specific questions possibly also through an international association which is in liaison with the TC; for typical European issues, possibly also through CEN). An explanation is given of the issues that may be addressed at meetings of TCs and/or WGs, during a letter ballot procedure, or in conjunction with formal voting processes. Finally, the responsibilities of the various officers (from the TC chairman to the WG experts) are considered and details given of the types of question they can answer or take appropriate action on.

Improving the participation of the OHS sector

A third question arises in addition to knowledge of formal rules and of the most efficient procedure, namely: what technical bodies are relevant for occupational health and safety at all? Are competent experts already involved, and where does a need exist for participation to be improved? These questions are considered in the third part of this study. It must be noted, however, that occupational health and safety (like environment or consumer questions) is a horizontal topic. In many cases in which technical committees deal with specific products, OHS will not be mentioned explicitly within their programmes of work, even though it is covered by the contents of the standards.

The International Classification of Standards (ICS) is therefore used in the first instance as the basis for consideration and evaluation of what issues might be of primary interest for the occupational health and safety sector. Technical bodies dealing with projects of immediate significance (noise and vibration, air quality, personal protection equipment and clothes, radiation protection, ergonomics, etc.) are clearly important. In addition, TCs developing product specifications who must take aspects of occupational health and safety into account are relevant. Further information on relevant bodies may be derived from surveys on current participation, and from the interrelationship of ISO and European activities.

Based on this material, 79 technical ISO bodies have been chosen and examined. The distribution of secretariats and working groups is considered, as is the participation of CEN members in the ISO bodies (in some cases only as observers) and the liaisons with international and European associations. From these data, substantial information can be derived on who is interested in which items, where possible allies may be found, and where there is a need for participation to be improved.

Recommendations

The following recommendations were approved by KAN in August 2005. They are the result of discussions by the working group supporting the study.

1. Recommendations to DIN

a) KAN requests that DIN put forward the proposal stated under 3a) during revision of ISO/IEC Guide 51, "Safety aspects - Guidelines for their inclusion in standards".

b) ISO standards are developed in technical committees (TCs), their sub-committees (SCs), and working groups (WGs). Development takes place in successive draft stages. At the committee stage, the committee draft (CD) drawn up by the WG is presented to the TC or SC in writing for comments. At the subsequent enquiry stage, the draft international standard (DIS) is presented to all ISO members for review and voting. At the final, acceptance stage, the final draft international standard (FDIS) is presented to all ISO members for formal voting. At present, DIN generally conducts the national public enquiry regarding an ISO draft standard on the basis of the DIS draft. The study found that it is substantially more difficult to exert technical influence at this stage than at the committee stage. This is particularly the case when DIN is represented in the responsible ISO/TC, and the submission of technical comments is expected during the CD enquiry. Since ISO's procedures do not prevent a national draft standard from being published prior to the DIS stage, KAN requests that DIN advise its standards committees to exploit fully the mechanisms provided for in DIN's procedures (see Section 4.9.1 of DIN 820-15, "Standardization - Part 15: Implementation of ISO and IEC international documents; Concepts and presentation" and DIN 820-4, "Standardization - Part 4: Working procedure") to publish international draft standards early where at all possible.

2. Recommendations to the stakeholders represented in KAN

a) Since it is increasingly common for standards of relevance to occupational health and safety to be developed at international level, KAN requests that the OH&S stakeholders take this development into account and actively support OH&S involvement in international standardization.

b) KAN requests that the OH&S stakeholders join in laying down priorities for involvement in ISO standardization (see 3b). For this purpose, in consideration of the associated consequences (e.g. the secondment of experts, assumption key offices of secretariat functions), the ISO standards committees of relevance to OH&S should be assigned priority as shown in the diagram (see the page after next).

c) KAN recommends that stakeholders represented within it step up co-operation with European and international partners in the area of international standards development. Contacts to the liaison organizations listed in the study (e.g. the ILO) who are in contact with the OH&S-related ISO committees could for example be exploited for this purpose.

3. Mandates to the KAN Secretariat

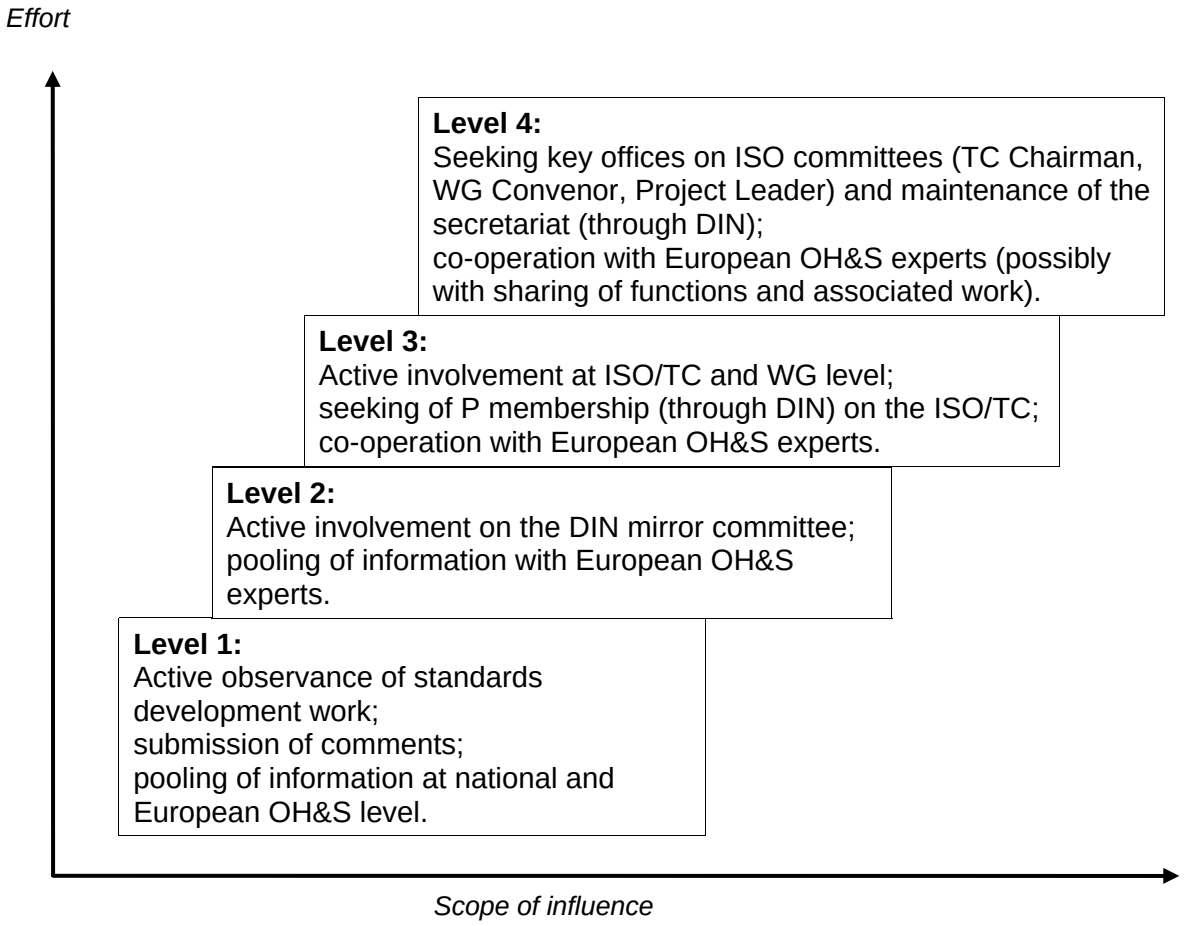
a) The Secretariat is mandated with development, in conjunction with the OH&S stakeholders, of a proposal for (minor) modification of ISO/IEC Guide 51, "Safety aspects - Guidelines for their inclusion in standards" and its submission to DIN. The objective is for the "modular approach", i.e. the division of product requirements and the health and safety of workers at work in the development of international standards, to be established within ISO/IEC Guide 51. Reference should be made in this process to the ISO/IEC directives.

b) The Secretariat is mandated with defining the priorities stated under 2b), co-ordinating them with the stakeholders, and updating them at regular intervals.

c) The Secretariat is mandated to seek co-operation with OH&S institutions amongst its European contacts which supports appropriate involvement of occupational health and safety stakeholders in international standards development work through the respective standards organizations.

d) The Secretariat is mandated with publication of the study in a suitable manner and presentation of its results in a workshop to the German OH&S professionals involved in standards development. The results of the study are to be discussed in this workshop, and the OH&S professionals consulted regarding their experience of how well OH&S interests can be carried through in ISO standardization activity and what improvements are deemed necessary. This in turn is to result in proposals for improving the influence of occupational health and safety in international standards development work.

Figure 1: Instruments available for influencing ISO standards development, as a function of the effort involved in participation



The scope for influence by OH&S stakeholders upon the development of ISO standards depends heavily upon the active involvement of OH&S experts in standards development work. The downside of greater involvement is however that the associated investment of financial and human resources increases proportionally. It must be borne in mind that occupational health and safety is a generic subject, frequently not mentioned explicitly on the agenda of Technical Committees, yet involving subjects which are addressed in many standards.

ISO standards under development should therefore be assigned appropriate priority, in consideration of each standard's relevance to occupational health and safety and the human and financial resources available. As shown in the diagram, a level can be associated with each ISO standards development project, to which certain consequences for OH&S stakeholders are linked. The activities indicated for any given level always include the activities of the levels below it (for example: participation on the ISO committee also includes participation on the national mirror committee).

Introduction

The International Organization for Standardization, ISO, and the International Electrotechnical Commission, IEC, in cooperation with the International Telecommunication Union, ITU, provide a world-wide system for development of technical rules.

The main goal of this system is the development and publication of International Standards. A complete and coherent system of International Standards is intended to facilitate the world-wide exchange of goods and services, and to support international cooperation in technical, economic, social, and scientific areas.

Within this system, ISO has the broadest field of application. In addition, ISO has the highest number of members. In the following – in line with the scope of this study – ISO is always given first consideration. All statements – unless explicitly stated otherwise – refer to ISO.

The following impressive figures have been published by the ISO Central Secretariat in January 2005: 146 national members; 2952 technical bodies, among them 190 TCs, 544 SCs, and 2188 WGs; 151 staff from 21 countries within the Central Secretariat; 14 941 International Standards and other deliverables; 4176 actual standards projects, among them 895 within preparatory stage, 1251 within committee stage (CD), 2030 within enquiry or approval stage (DIS or FDIS); 581 liaison organizations.

The German member body of ISO has been DIN, the German Institute for Standardization, for more than 50 years now having been readmitted to ISO and IEC in 1952. DIN at present is responsible for more than 17 % of secretariats of technical ISO bodies (in particular of ISO/TCs). DIN is a standing member of the ISO Council and of the Technical Management Board (ISO/TMB). Participation within the DIN committees mirroring the ISO technical bodies provides wide-ranging possibilities for influencing international standardization work (see also 2.2 and 2.6.3).

This report is widely based on data which have been published by the International Organization for Standardization on the Internet (www.iso.org; status as of 2005-05-01).

1 Procedures of international standardization

1.1 Structures and bodies of ISO

Within ISO, every member country is represented by (only) one institution which has to act on behalf of all the interests of its country. Every member – contrary to European Standardization with its weighted voting procedure – has only one vote for formal decisions (see also certain remarks in 1.3.4.3). In addition to the ISO member bodies with full voting rights, there are corresponding members (in particular representing certain developing countries) with observer status and full access to available information, as well as subscriber members with more limited rights and obligations.

The most important ISO bodies are (see also figure 1)

- the **ISO General Assembly**, comprising delegations of all ISO member bodies, and responsible for decisions on all general questions,

- the **ISO Council**, composed of personal representatives of 18 elected member bodies, and responsible for standardization policy work,

- the **ISO Technical Management Board**, TMB, composed of personal representatives of 12 elected member bodies, responsible for directing all technical work and deciding on basic technical questions,

- the **ISO technical committees**, ISO/TCs, comprising national delegations of ISO member bodies, with **subcommittees** (SCs) and **working groups** (WGs),

- the **ISO Central Secretariat**, ISO/CS, headed by the Secretary General, composed of professional technical officers for standardization and their assistants.

The General Assembly and the technical committees of ISO are open to all ISO member bodies. Furthermore, representatives of international organizations in liaison for a certain technical area may participate in an observer capacity. Within working groups, individual experts nominated by ISO member bodies or by the TC itself meet for technical discussions.

Members of the ISO Council and the TMB are elected for defined periods. Some member bodies, e.g. DIN, are standing members of these bodies. Besides Council and TMB, there are several standing committes and advisory groups (which are open to all ISO member bodies). Among them are the Policy Developing Committees, namely CASCO for conformity assessment, COPOLCO for consumer questions and DEVCO for developing countries (a similar committee for occupational health and safety does not at present exist). Furthermore, there are committees for finances, strategy and similar questions that concern Council and TMB.

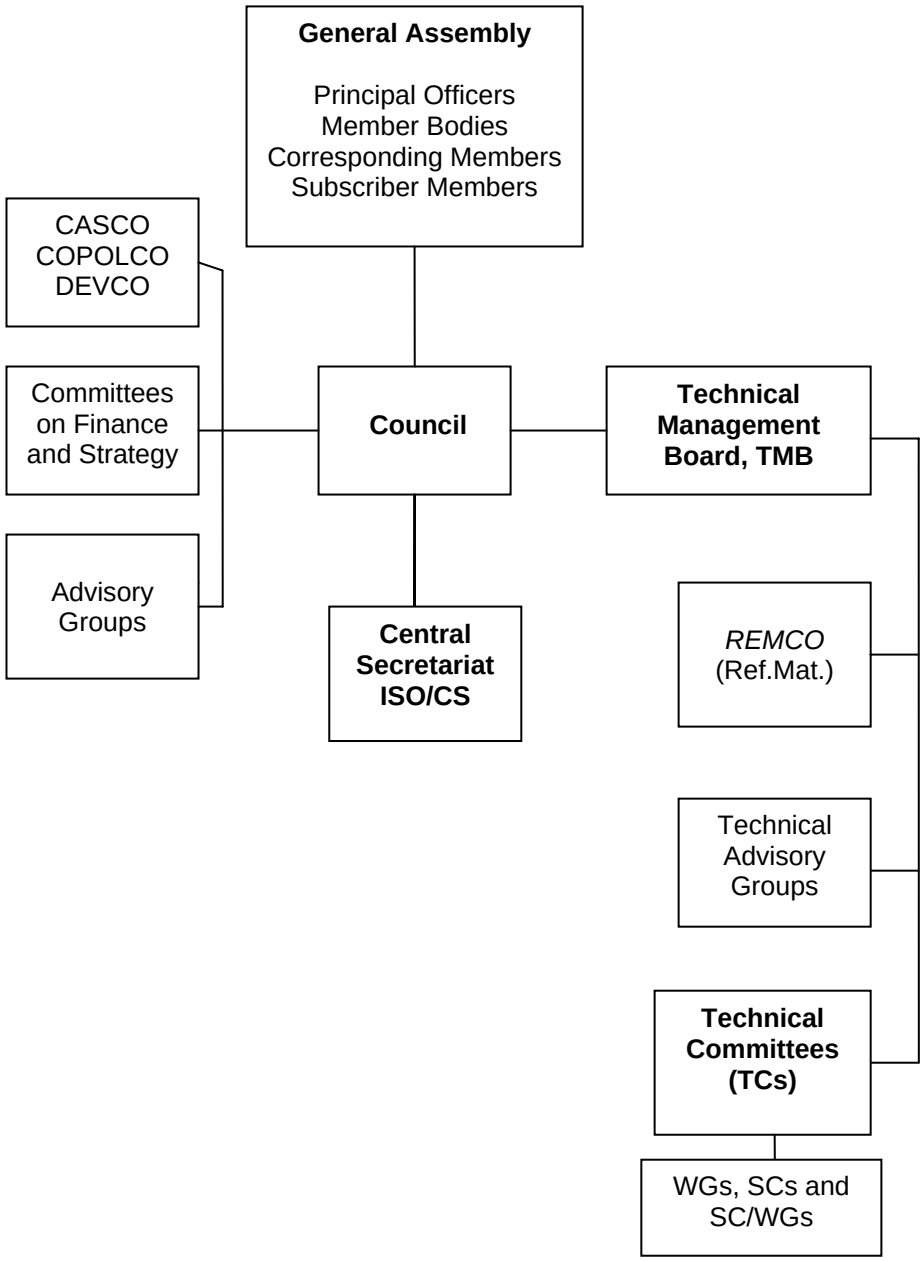


Figure 1. Basic structure of ISO

1.2 Development of International Standards (project stages and working procedures)

1.2.1 Principles

The development of International Standards is done by the technical committees (TCs) and their subcommittees (SCs) and working groups (WGs). All ISO member bodies are allowed, as a matter of principle, to participate in the work of every TC and/or SC and their WGs. They may put forward a specific request at any time but preferably at the beginning of new work. They may choose between P-member status (which grants them full participation) and O-member status (which permits them to be fully informed).

The work of TCs, SCs and WGs is decentralized, the responsibility for each of these bodies being given to an ISO member body. The ISO Central Secretariat in Geneva is responsible for the following tasks: general administration, overall planning and coordination of technical work, dealing with enquiry and approval procedures, publication of International Standards, Technical Specifications and Technical Reports, provision of secretariat services for the ISO bodies (with the exception of the technical committees, and their SCs and WGs).

The technical work (development of International Standards and other normative documents) is done in stages. The basic rules for this are laid down in the ISO/IEC Directives, which also apply for the work of the International Electrotechnical Commission (IEC). The ISO/IEC Directives consist of

Part 1: Procedures for the technical work,
Part 2: Rules for the structure and drafting of International Standards.

For further details see annex A, and in addition 1.5 with regard to structure and drafting.

1.2.2 New areas of work

Proposals for new areas of work that do not fall into the scope of an existing TC are submitted to all ISO member bodies for an enquiry. On the basis of the results of this enquiry, the Technical Management Board (TMB) will decide whether a new TC is created.

1.2.3 Preliminary stage

A TC or SC may include **preliminary work items,** which are not yet mature for detailed technical work, into its programme of work. They are kept in the preliminary stage and examined for their possible further development at regular times by the responsible committee.

1.2.4 Proposal stage

New work item proposals (NP) for the development of International Standards (including revision or amendment of existing ones) may be brought forward by a member body, by the secretariat of the responsible TC or SC, by another TC or SC, by an organization in liaison, by the TMB and its advisory committees, or by the Secretary General. If there is sufficient support (simple majority of P-Members of the TC or SC, and at least five P-Members committing themselves to participate actively in the project (e.g. by sending experts to the responsible WG), the new work item is included into the programme of work of the TC or SC. The Standards Value Assessment Tool, SVAT, an evaluation system based on points for certain characteristics, is used as an additional measure for decision. Until now, however, the system has not yet proven its capability of being the only criterion for decision.

See also 2.5.1 for possibilities of giving input to the proposal stage.

1.2.5 Preparation stage

The preparation stage covers the development of a **working draft (WD).** This is done usually at working group level. Most often several WDs are necessary before a stable working result can be registered to become a committee draft and to start the subsequent committee stage.

1.2.6 Committee stage

At committee stage, the **committee draft (CD)** is submitted to the TC or SC for decision and comments. The secretariat prepares a report on the comments and provides a proposal for further action. If three or more negative votes on the CD have been obtained, the CD has to be discussed at a meeting. At this meeting, or after an additional written request for comments, the decision on the registration of the documents to start the enquiry stage may be taken. This decision is made by consensus (consensus is assumed to be reached if no objections to substantial parts of the documents are maintained; it does not mean unanimity).

See also 2.5.3 for possibilities of giving input to the committee stage.

1.2.7 Enquiry stage

At the enquiry stage, the enquiry draft, i.e. the **draft International Standard (DIS),** is submitted to all ISO member bodies for examination and voting (Yes, No, Abstention) within five months. Members may submit technical comments with their vote; they are, however, in the case of a positive vote not allowed to declare them to be a condition for their positive vote. If the DIS is not acceptable for a member in its current form, a member should vote negatively and explain the reasons for this. It may declare that in the case of certain technical changes the negative vote would be changed into a positive one. For the approval of a DIS a two-thirds majority of P-members of the responsible TC or SC is necessary, and, in addition to this, a three-quarters majority of all ISO member bodies voting (i.e. including those not participating in the TC or SC).

After the end of the enquiry, the secretariat prepares a report to the TC or SC of the results of the enquiry and the comments received, and the chairman takes a decision how to proceed. If the results are positive, the secretariat with the help of its editing committee will prepare the final draft version. Otherwise, the TC or SC has to decide on the acceptance of the comments received. Efforts shall also be taken to solve the problems connected with negative votes. If appropriate, a revised DIS may be submitted to a second enquiry. The enquiry stage is finished by the registration of the document as a final draft International Standard (FDIS).

See also 2.5.5 for possibilities of giving input to the DIS enquiry stage.

1.2.8 Approval stage

At the approval stage which follows, the final draft International Standard (FDIS) is submitted to all ISO member bodies for formal vote within two months. At this time the final draft can not be changed anymore, but can only be approved or rejected (the latter with adequate justification). For approval, the same numerical conditions apply as for the DIS at the enquiry stage. The approval stage may be omitted if there are no negative votes and no technical comments on the DIS.

1.2.9 Publication stage

At the subsequent publication stage, the ISO Central Secretariat publishes the International Standard and initiates distribution of the document via the responsible national members, or, in countries which are not represented in ISO and IEC, by offering this service itself.

At least every five years the International Standard has to be checked and confirmed by systematic review in the TC. On this occasion it may be decided to revise the standard, or even to withdraw it as a whole. The stages for complete revision of the International Standard are the same as for the initial development. Minor changes, however, can be processed by issuing Technical Corrigenda or Amendments. In this case, only those parts of the International Standard subject to changes are processed and published as separate documents.

Table 1. Development stages of an ISO standard

Stage	**Document**	**Remarks**
Preliminary stage	Preliminary work item **PWI**	It is not yet possible to fix target dates for a PWI. The responsible technical committee has to carry out regular examination of all PWIs within its work programme.
Proposal stage	New work item proposal **NP**	A NP may lead to various results, e.g. a new ISO Standard, the revision or amendment of an existing ISO Standard, a Technical Specification, or even a Technical Report; see also 1.3 on the different types of document. The approval of the proposal is done by letter ballot or in a meeting. A NP is adopted if a simple majority of the P-members of the responsible committee supports the proposal, and, in addition, if at least five members commit themselves to participate actively in the project, in particular by nominating experts for the technical work.
Preparatory stage	Working draft **WD**	The development of a WD is preferably done by a working group (WG) composed of competent experts, the convenor of which will undertake the function of a project leader. As a result of this, a document to be registered as a committee draft (CD), in the ISO language versions, will be submitted by the WG to the responsible technical committee (TC) or subcommittee (SC).
Committee stage	Committee draft **CD**	A CD is submitted to the P-members of the responsible TC or SC for approval with a target date of three to six months. The CD is deemed to be approved by a majority of at least two-thirds positive votes.

Enquiry stage	Enquiry draft, i.e. draft International Standard **DIS**	The DIS is submitted by the ISO Central Secretariat to all ISO member bodies for vote and comments within five months. The DIS is approved if at least two-thirds of the P-members of the TC have voted in favour, and if not more than one quarter of all ISO member bodies voting have expressed negative votes.
Approval stage	Final draft International Standard **FDIS**	The FDIS is approved if at least two-thirds of the P-members of the TC have voted in favour, and if not more than one quarter of all ISO member bodies voting have expressed negative votes. The target date for the formal vote is two months.
Publication stage	International Standard **ISO**	An ISO Standard has to be reviewed by the responsible TC or SC at least every five years. As a result of this review, the ISO Standard either has to be confirmed, or revised, or withdrawn. The decision is taken by a two-thirds majority of the P-members.

1.3 Types of document and decision process

1.3.1 Principles

The main product (quantitatively as in other respects) of international standardization work is still the International Standard. However, the development times required by the complete work flow often do not satisfy the needs of certain areas with rapid development in technology (in particular, information and communication technology). Therefore new suggestions for abbreviated development procedures and new types of technical document are presented repeatedly. The set of document types currently available is shown in 1.3.2. See also table 2 explaining their interrelation with the specific ISO bodies and the project stages.

In addition to the possible results of the technical work, more formal apects also are of interest. 1.3.3 presents an overview of administrative documents and rules, 1.3.4 explains the most important decision and voting processes.

1.3.2 Technical documents

1.3.2.1 International Standard

An ISO International Standard has normally gone through the complete set of stages and procedures as described in 1.2 (see also annex A). If it is based on a recognized standard (e.g. an EN which already exists), the work flow can be shortened and the document may be

submitted directly to the DIS enquiry or to the FDIS formal vote.

1.3.2.2 International Technical Specification (ISO/TS)

The Technical Specification is a normative document that is developed by a technical committee and is approved by vote of the P-members of the same committee.

Technical Specifications are often developed in cases where provisions have to be established for subjects that are still under development but for which, however, certain (pre-)normative rules are already requested. They can also emerge from regular standardization work in cases where no consensus can be derived from the results of the enquiry, or where the preparation of the final draft International Standard fails, but where, nevertheless, an alternative type of document is looked for.

If no agreement can be achieved on a single solution, competing specifications on the same subject may be published. They shall not, however, contradict existing International Standards.

The Technical Specification has approximately the status of the DIN Prestandard, or of the former ENV. The TS is reviewed, at the latest, three years after its publication to see whether it can be transferred into an International Standard. Subjects for which a normative solution cannot be found in the foreseeable future should not be developed as a TS but may, if appropriate, be developed as a TR (see 1.3.2.6).

1.3.2.3 Publicly Available Specification (PAS)

The PAS resembles the TS but differs above all in the voting procedure (see also 1.3.4.2). There is no comparable document at European level, but something similar exists at national level at DIN (also called PAS). Internationally, a PAS is based on the consensus results of a working group, or on an external proposal. It must be formally approved by the responsible TC.

1.3.2.4 International Workshop Agreement (IWA)

A Workshop Agreement is an ISO publication that has been developed and approved by an ISO Workshop, and that reflects the consensus of the involved individuals or organizations which are responsible for its contents.

An ISO Workshop is organized as a result of an external proposal. Anyone can present such a suggestion to the ISO Central Secretariat. The ISO member bodies and, if appropriate, TCs concerned by the subject are informed about this activity.

The Workshop develops the draft IWA. The chairperson decides on the basis of the comments and the consensus behaviour of the registered participants of the Workshop, whether and when the IWA is regarded as being approved. An appeal against this decision is possible. IWAs are allowed to compete with each other and with ISO Standards; they shall not, however, contradict existing ISO Standards.

1.3.2.5 ISO Guide

The Guide is regarded as an informative document although it can contain provisions that may be, e.g. by decision of the TMB, made binding within the standardization system. It contains information and political principles about standardization work as well as instructions how to

draft standards with regard to special aspects, e.g. safety. A Guide is not developed by an ISO/TC but usually instead by a working group of the Policy Committees or of the TMB. A Guide is written according to the rules for design and presentation of standards, and it is also made available to the public.

Table 2. Work flows within ISO and their possible results

Working step	**Result of classical path**	**Result of alternative path**
Consensus in the **Working group** (individual experts)	Registration of a **committee draft (CD)**	Approval of a **Publicly Available Specification (PAS)** or of a **Technical Specification (TS)** or of a **Technical Report (TR)**
Decision of the **Technical committee** (national delegations)	Submission of a **Draft International Standard (DIS)** for enquiry	
Results of **enquiry**, resolution of comments and decision of TC	Submission of a **final draft International Standard** (**FDIS)** for formal vote	In the case of no consensus on the text of a FDIS possible approval of a **Technical Specification (TS)** or a **Technical Report (TR)**
Results of **formal vote**	Approval of an **International Standard (ISO)**	
Working result of a **workshop**		Approval of an **International Workshop Agreement (IWA)**

1.3.2.6 ISO Technical Report (ISO/TR)

The Technical Report is an informative document and is published when it seems to be necessary or appropriate to inform the ISO member bodies or the public about certain aspects of standardization work.

Most often a TR contains data (e.g. results of of studies orsurveys) which are not suitable for

publication as a standard. A TR may be published, however, when a standards project has failed, and no approved standard or specification can be published, but the work results nevertheless contain new findings, and business enterprises should be encouraged to carry out further research.

The decision to publish a TR is made by the TC, and a formal check is made by the Central Secretariat and, if necessary, by the TMB.

1.3.2.7 ISO committee draft (ISO/CD)

The first committee draft is the final result of the responsible working group, that is now submitted to the ISO/TC for examination and approval. Discussion on the CD should normally result in the ISO/DIS enquiry which is submitted to all ISO member bodies. If, however, the CD does not get the substantial support of the TC, something else may be derived from it, e.g. a PAS.

1.3.2.8 ISO working draft (ISO/WD)

The working draft is the first written result concerning a new standards project. It is usually restricted to discussion in the working group. If it is given for information to the TC, this is not yet a request for comments but a possibility for the TC to examine whether the WG operates in the desired direction.

1.3.3 Administrative documents

The ISO Statutes and the Rules of Procedure are administrative documents of a general type. They contain the rules for the ISO bodies and the technical officers, as well as similar topics. With respect to possible influence on the contents of International Standards, they are unproductive.

On the other hand, the ISO Directives describe the responsibilities and procedures for the technical work, i.e. for the development (Part 1) and design (Part 2) of International Standards. They have a rather complicated structure since they are the common basis provisions for both ISO and IEC. Additionally, however, there are Supplements for each of the two organizations with respect to Part 1, and, finally, special addenda of the technical steering committees. See also 1.5 and annex A.

A special field of activity is the cooperation between ISO and CEN. The Vienna Agreement governs the complicated procedures among which the parallel vote is the most well known one. The basic Vienna Agreement is a general political document. More important for the day-to-day work are the Guidelines for the Implementation of the Agreement on Technical Cooperation between ISO and CEN. See also 1.4 and annex C.

Among the other documents, some Guides play an important role. As mentioned before, Guides contain political statements about the execution of standardization work, which may become binding for the TCs (or also other groups) by decision of the TMB. Examples are ISO/IEC Guide 21 on the adoption of International Standards as national or regional standards (see also 1.6), ISO/IEC Guide 51 on safety aspects in standards, ISO Guide 72 (identical with DIN-Fachbericht 121 on justification and development of standards on management systems), and ISO Guide 73 on risk management.

1.3.4 Specific decision making procedures

1.3.4.1 Decision making in the WGs

The working group is a discussion forum of experts nominated in a personal capacity. They are not bound to a national point of view and they also cannot vote formally on behalf of their countries. The working group takes its decisions through consensus. According to the definition presented in ISO/IEC Guide 2, this does not mean unanimity in every case, but the absence of sustained substantial objections.

Of course, fundamental discrepancies between the results of a working group and the expectations of the parent technical committee should be avoided if possible. For this reason, DIN has prepared at national level some notes and recommendations on the participation of its standards committees in European and international standardization bodies, see 2.5.4, 2.6.5 and 2.6.6 as well as annex B.

1.3.4.2 Voting in the TCs

The technical committee takes quite different types of decision. Many administrative questions are decided with a simple majority. An essential technical decision is the approval of a CD to be submitted to the DIS enquiry. According to the rules, the TC (similarly as a WG) should strive for a consensus decision. In any case of doubt, a two-thirds majority of the P-members applies. The TC should try, however, to take negative comments into account wherever possible. For other cases see table 3.

Table 3. Voting in the TCs

Object of voting	**Majority required**	**Remarks**
Technical Specification, TS	2/3 majority of P-members	Without abstentions
PAS	Simple majority of P-members	Without abstentions
Technical Report, TR	Simple majority of P-members	Without abstentions
Committee draft, CD	Consensus, in cases of doubt 2/3 majority of P-members	

1.3.4.3 Votes of ISO member bodies

Voting at the level of the General Assembly, i.e. all ISO member bodies being involved, is the most general way of taking decisions on ISO matters. It is applied for some general questions, e.g. changes of the statutes or election of the president, but also for some technical documents, in particular, the approval of ISO Standards and Guides, see table 4.

Table 4. Voting of ISO member bodies on technical documents

Object of voting	Majority required	Remarks
ISO Standard	Less than 25 % negative votes of votes cast	Without abstentions; in addition 2/3 majority of P-members of the TC
ISO Guide	Less than 25 % negative votes of votes cast	Without abstentions

There have been repeated discussions on the principle „one country, one vote". In particular the Europeans have been accused of achieving a majority over other economy blocks with fewer though bigger countries through „blockvoting". Such behaviour, however, has never been proved statistically. Any reorganization of voting would probably lead to a weighted voting system according to the European model. There is, however, no valid political basis for such a system at international level. It can be foreseen that weighted voting would probably reduce the influence of the developing countries in ISO (which is politically undesirable) and that it would not change essentially the present balance of power (Europe covers three of the five biggest and most influential ISO member bodies).

1.3.4.4 Appeal procedure

Similarly to DIN, ISO also uses a multi-stage appeal procedure, see table 5. An appeal within ISO can be directed against all decisions, activities or omissions of technical committees or subcommittees as well as of the Technical Management Board. The technical content of an ISO document, however, is only acknowledged as reason for an appeal if it raises fundamental problems.

The appeal does not lead primarily to a renewed discussion in the same committee but is negotiated, after adequate information and preparation, at the next higher level, i.e. an appeal against a decision of a TC is submitted to the TMB. The TMB will try to find a conclusive solution. Pure technical questions, however, will possibly be referred back to the TC with concrete instructions about their further treatment.

A schematic comparison of the appeal procedures within ISO and DIN is given in table 5.

Table 5. Comparison of appeal procedures within DIN and ISO

	DIN 820-4	**ISO Directives Part 1**
Petitioner	Comments provider	ISO member body (e.g. P-member of the relevant TC)
1. stage	Against an action of a working committee, to the chairman of the standards committee	Against an action of a SC, to the TC
2. stage	If appeal to the chairman fails, to the director of DIN	Against an action of a TC, to the TMB
3. stage	If appeal to the director of DIN fails, to the DIN board	Against an action of the TMB, to the ISO Council
Progress of work	Appeal does not delay work (with the exception of health and safety items)	Technical work is ongoing until approval

1.4 Cooperation at European and international levels (Vienna Agreement between ISO and CEN)

1.4.1 Principles

There is is no formal commitment of ISO member bodies to adopt an International Standard as a national one. All ISO member bodies may freely decide on different possibilities: to recommend the immediate use of the International Standard, or to adopt it as an identical national standard, or to use the ISO Standard as a basis for its own technical work, or even to reject the ISO Standard and publish a divergent national one. The vote cast during the approval procedures does not influence this situation.

The functioning of the European Internal Market is based to a large extent on the existence of European Standards (EN). It is a declared policy of the European standardization bodies, and also the wish of the European Commission, to use International Standards as a basis for European Standards as far as possible, and preferably to adopt them without changes. According to the Internal Regulations of the European committees, CEN and CENELEC, European Standards have to be transposed unchanged into the national sets of standards, and deviating national standards - with few exceptions – have to be withdrawn.

It is obvious that this interdependence should lead to close cooperation and subdivision of work between the international and the European levels. The "Vienna Agreement" between ISO and CEN (as well as the similar "Dresden Agreement" between IEC and CENELEC) aims to undertake the technical work, as far as possible, at only one level. Appropriate procedures of voting, however, are intended to enable the simultaneous approval of International as well as European Standards. It is possible not only to transfer complete standards projects and to carry out parallel voting in ISO and CEN, but also to vote immediately on completed results.

The Vienna Agreement was approved by the CEN Administration Board and the former ISO Executive Board in 1991, and applies in this form (with the exception of some minor alterations of 2001) until today. It does not restrict itself to the often-mentioned parallel voting but includes the full range of cooperation that can be achieved in diverse ways. The Vienna Agreement itself is a general political document. More practical and interesting for the day-to-day work are the Guidelines for the Implementation of the Agreement on Technical Cooperation between ISO and CEN (see annex C), which describe the available procedures.

1.4.2 Cooperation by correspondence

The exchange of information between the Central Secretariats and the mutual reporting on technical work between the TCs are the basis of all technical cooperation. If comments of the TCs or the Central Secretariats are given, they should reflect a balanced point of view of the respective organization. Clause 2 of the Guidelines mentions, however, the possibility that also ISO member bodies outside of CEN may directly comment on draft European Standards (the reverse possibility is given automatically since all CEN members are also ISO member bodies).

1.4.3 Cooperation by mutual participation in meetings

Up to four observers of the other organizations are permitted to participate at meetings. They have to be nominated by the sending committee through formal resolution, and should preferably be chairpersons, secretaries, convenors or project-leaders. It is obvious that they have to present a balanced view. Technical committees with related fields of responsibility may ask the Central Secretariats to arrange coordination meetings to solve questions of common interest.

The Joint ISO/CEN Coordinating Group of the Technical (Management) Boards (JCG) plays an important strategic role in this field.

1.4.4 Cooperation by adoption of existing standards

The adoption of existing International Standards as ENs is the more important variation. This can be done without or with European modifications, and is described at the ISO level in ISO/IEC Guide 21 and at the CEN level in the CEN/CENELEC Internal Regulations, Part 2. The Questionnaire Procedure or the Unique Acceptance Procedure (UAP) is applied, the latter combining enquiry and formal vote in one procedure. UAP in particular may be used if it is evident from prior history (e.g. from voting results at international level) that the relevant reference document will meet high acceptance in Europe.

On the other hand, existing European Standards can also be proposed for adoption at international level - like all the proposals of ISO member bodies for international work that are based on national standards. This possibility is, however, not very frequently used in view of the fact that most ISO member bodies do not have any direct access to the European work.

Nevertheless there are some specific rules. In particular, the „Fast-Track"-procedures of ISO allow existing standards from other organizations to be fed directly into the international standardization work. A P-member or a liaison-A organization in a TC can propose an existing standard from any source (i.e. equally an EN) for immediate submission to the DIS enquiry. (Documents from certain recognized international organizations may even enter at FDIS stage.)

1.4.5 Cooperation by transfer of standards projects and subsequent parallel voting

There may be parallel voting not only on the basis of ISO results, but also on the basis of CEN results.

Standardization policy requires that the work should take place, as far as possible, at the most common level. So the specific transfer of standards projects is mostly made in the direction from CEN to ISO. Restrictive conditions may be caused by European target dates, and, within mandated projects for harmonized standards, also by the requirements of European Directives (see also 2.5.8 regarding the „Annex Z"). At any time CEN may restart its own work if the ISO results do not satisfy the European needs.

It may also occur, however, that proposed standards projects are of interest to ISO, but without there existing suitable possibilities for undertaking the technical work, with a result that the responsible ISO body may agree to the work being dealt with by CEN.

The parallel voting is undertaken at ISO and CEN levels according to the respective rules of each side. On this occasion, activities at all three levels (internationally, European and German) may interlock with each other. The evaluation of the results, which can be quite different at ISO and CEN, is important:

ISO positive, CEN positive: Publication of the result as ISO and as EN-ISO Standard

ISO positive, CEN negative: Consultation between ISO and CEN, publication of the result as ISO Standard

ISO negative, CEN positive: Consultation between ISO and CEN, publication of the result as EN Standard

ISO negative, CEN negative: Consultation between ISO and CEN, result is referred back to the technical committee

An intensive mutual coordination of work programmes, progress of work and approval processes is of great importance. See also 2.4 for further possibilities of giving input to ISO via CEN.

Table 6. Approval of International Standards via PQ or UAP

	ISO	**CEN**		**DIN**
Proposal stage	Existing ISO Standard	(External) Proposal or decison of BT		Vote on proposal; participation in BT
Preparatory stage		Choice of Reference Document		Contribution of DIN
Committee stage		none		
Enquiry stage)**	5) Decision on revision of ISO Standard, if appropriate	1) PQ (or UQ); 3 months 4) If ap-propriate, comment s to ISO	1) UAP; 5 months	2) DIN-EN-ISO draft standard*) or reference to former DIN-ISO-draft, if available; 3) Comments to CEN
Approval stage		Formal vote; 2 months		German vote to CEN
Publication stage		Ratification of EN ISO text or EN with modifications		DIN-EN-ISO or DIN-EN Standard

*) If appropriate, abbreviated procedure
**) Sequence in enquiry stage 1-2-3-4-5 to be noted

Table 7. Parallel Voting - Allocation of work to ISO (ISO lead)

	ISO	**CEN**	**DIN**
Proposal stage*)	5) Approval of project transfer	1) Proposal for NWI 3) Decision on project transfer	2) 6) Vote on proposal 4) Participation in BT
Preparatory stage	Developing working draft in WG		Participation of DIN experts
Committee stage	Reaching consensus in TC or SC		Participation of DIN delegation
Enquiry stage*)	1) Enquiry on DIS (5 months) 4) Preparation of FDIS	1) Enquiry on prEN-ISO (5 months) 5) Decision on modifications, if appropriate	2) DIN-EN-ISO Draft Standard 3) German comments to ISO and CEN
Approval stage	Formal vote on FDIS (2 months)	Formal Vote (2 months)	German vote to ISO and CEN
Publication stage	Publication of ISO Standard	Ratification of EN ISO text or EN with modifications	DIN-EN-ISO or DIN-EN Standard

*) Sequence to be noted

Table 8. Parallel Voting - Allocation of work to CEN (CEN lead)

	ISO	**CEN**	**DIN**
Proposal stage	Decision of ISO to allocate work to CEN	Proposal for NWI	Vote on proposal
Preparatory stage		Developing working draft in WG	Participation of DIN experts
Committee stage		Reaching consensus in TC/SC	Participation of DIN delegation
Enquiry stage*)	1) Enquiry on DIS (5 months) 4) ISO comments to CEN	1) Enquiry on prEN (5 months) 5) Preparation of final draft	2) DIN-EN-ISO draft standard 3) German comments to ISO and CEN
Approval stage	Formal vote on FDIS (2 months)	Formal vote (2 months)	German vote to CEN and ISO
Publication stage	Publication of ISO Standard	Ratification of EN ISO text or EN	DIN-EN-ISO Standard or DIN-EN Standard

*) If appropriate, abbreviated procedure; sequence to be noted

1.5 Structure and drafting of International Standards

The rules for structure and drafting of ISO standards (covered by the ISO/IEC Directives, Part 2) are, above all, tools for the experts who draft the text of the standards. Nevertheless they go far beyond pure editing instructions and provide numerous statements (positive and negative ones) on the contents of the standard and its structure. For example, Annex A.2 of ISO/IEC Directives, Part 2, recommends that a standard should be subdivided into different parts if is expected that the different provisions for the same standards topic may be of different importance for different parties. Thus the relevant points of interest, e.g. for the legislator, could be separated from the remaining content.

If there is the wish to provide input to an ISO standard, the rules for presentation play a certain role, too. It is awkward to find out only in the technical discussions that there may be formal obstacles against a proposal which in principle is fully justifiable. Even if one can easily deal with the problem on the spot, it leads to delay and gives occasion for objections. Some basic principles are therefore presented here in brief.

It is the fundamental purpose of an International Standard to facilitate trade. The standard must be as complete, unequivocal and exact as possible in the framework of its scope, and it must take the state of technology into account. It must offer a framework for future technical progress and it must be comprehensible for qualified experts, even if these did not take part in its development.

In a single standard, and also in a series of technically interrelated standards, uniform structure and uniform terminology have to be ensured. The basic standards on terminology, quantities and units, abbreviations, references, drawings, graphic symbols, tolerances and fits, preferred values, statistics, environmental conditions, testing, safety etc. must be taken into account. Within various language versions, the technical content must be equivalent and the structure must be identical. The direct use or the adoption of the International Standard as a regional or national standard should be possible without change.

The general structure of an International Standard consists of normative elements (which are relevant for the assessment of conformity with the standard) and informative elements, which should facilitate the use of the standard.

Among the technical normative elements, requirements for products play a special role. Products have many measurable characteristics but only some selected ones are relevant for standardization. The primary goal is the fitness for purpose of the product. The standard may deal with safety and protection of health, compatibility with the environment, interfaces, interchangeability, interoperability, type reduction, or with several of these aspects.

If the standard touches aspects of safety, environment, or protection of workers, special care is necessary. Most countries define immission limiting values and matters of exposure of people to noise, dust, damaging gases, etc. in national technical regulations. On the other hand, it is important to establish requirements for products (e.g. emission characteristics) supranationally in International Standards since otherwise international trade may be hampered by „technical barriers to trade“.

For product requirements, the final status of the product has to be kept in mind. Furthermore, a standard should not, unless it is necessary for technical reasons, establish design characteristics, or even a certain production process, but preferably it should establish performance characteristics and the procedures for testing these. This does not exclude that within interface standards (e.g. plugs/sockets) dimensional properties have also to be defined in order to fulfil the performance requirements, or that inspection must be required for certain products (e.g. pressure vessels) during the production process.

With respect to drafting, there are rules for the application of the auxiliary verbs and their

meaning for the provisions of the standard. A distinction is made between requirements, recommendations, permission and possibility.

The fundamental structure of an ISO standard is given in table 9. Some sections must exist in every standard, others are optional and can be designed according to individual needs.

1.6 Use and implementation of International Standards

Since the 1970s, ISO standards have been selfstanding documents that may not only be directly used as reference documents by business, but also may be used in legislation. Nevertheless, the adoption (or endorsement) of International Standards as national ones is an important goal of international work. Within European standardization, the common regional adoption of International Standards as European Standards (and consequently as national standards) is more and more in use.

The obligations of the members towards the International and the European Standards are different. International Standards may be applied directly. At the same time they constitute recommendations to the ISO member bodies to publish corresponding national standards. A binding obligation to do this (maybe by statute) does not, however, exist.

It follows that the adoption of International Standards is a voluntary act. There are various possibilities of adoption and of identification of the degree of correspondence. These are described in ISO/IEC Guide 21 on adoption of International Standards as regional or national standards. The application of International Standards as a basis for national standardization as well as for technical legislation is supported by the agreement on technical barriers to trade of the World Trade Organization WHO (WTO/TBT Agreement).

Guide 21 defines three degrees of equivalence (identical, modified and not equivalent). The possibilities of adoption include the endorsement notice, reprinting, translation and redrafting. All methods can be applied at national as well as at regional (in particular European) level. Corresponding rules can be found in DIN 820-15 for the DIN set of standards, and in the CEN/CENELEC Internal Regulations, Part 3, for the European standardization work. As a matter of principle, the relationship with ISO or IEC is declared on the title pages of the German or European Standards, and an appropriate number is used.

The vice versa principle is valid for identical adoption, i.e. what is permitted according to the provisions of the adopted standard must be permitted also according to the provisions of the adopting standard, and vice versa. The adopting standard may leave out purely informative parts of the adopted standards or may add such ones.

Table 9. Arrangement of elements in an ISO standard (elements in **bold** are required)

Type	**Clause(s)**	**Permitted elements**
Normative general	**Titlel page / title**	**Text**
Informative preliminary	Table of contents	
	Foreword	**Text**, notes, footnotes
	Introduction	Text, figures, tables, notes, footnotes
Normative general	**Scope**	**Text**, figures, tables, notes, footnotes
	Normative references	References, footnotes
Normative technical	Terms and definitions Symbols and abbreviations Requirements Sampling Test procedure Labelling Marking Packaging, etc..	Text, figures, tables, notes, footnotes
	Normative annexes	Text, figures, tables, notes, footnotes
Informative supplementary	Informative annexes	Text, figures, tables, notes, footnotes
	Bibliography	References, footnotes
	Index	

Table 10. Adoption of International Standards and degrees of correspondance

Degree of correspondence	**Method of adoption**	**Contents**	**Structure**
Identical (IDT) Number: DIN ISO, EN ISO, DIN EN ISO	a) Endorsement notice b) Reprinting c) Translation	a) contents unchanged b) and c) certain editorial changes permitted	a) to c) structure unchanged
Modified (MOD) Number: DIN, EN, DIN EN	a) Reprinting b) Translation	a) and b) editorial changes permitted as for IDT, furthermore technical changes permitted	a) and b) structure comparable, technical changes marked
Not equivalent (NEQ) Number: DIN, EN, DIN EN	a) Translation b) Redrafting	a) and b) editorial and technical changes	a) and b) structure changed

2 Possible influence on international standardization

2.1 Principles

While an International Standard is being developed, a complicated process of design work, resolution of comments, editing work, debates and votes takes place, see 1.2 and annex A. This process is closely interwoven with parallel national activities, but, even so, not as closely as the European work is, which, of course, leads to identical national standards. Nevertheless, international work can be directly interconnected with European work in the framework of the Vienna Agreement, see 1.4 and annex C, and, in this case, activities will run parallel on up to three levels.

Full participation in this process is restricted to ISO member bodies (only these have extensive rights to participate and vote); in some stages also, international organizations with liaison status can take part in the work as observers. Furthermore, ISO and CEN committees can enter into direct relationship in the framework of the Vienna Agreement.

At each stage of the international standardization process, there are direct or indirect possibilities for influence. In general, the mechanisms provided for giving such input are more diverse and more open in the case of technical contributions and comments, and more strictly formalized when official decisions are taken.

If an interested party would like to put forward a concern, some questions must be clarified in the beginning. What goal should be reached (e.g. consideration of certain topics, or change of requirements)? Which body has to be chosen to address the concern (e.g. TC or WG)? When would be the appropriate time (e.g. proposal stage, WG work or CD discussion)? Through which communication route (e.g. ISO member body, international organization or CEN) should the concern be introduced?

Furthermore, it can be learned from experience that some general principles must be taken into account:

- The concern should be drafted in an unambiguous way; it should have broad support by all parties who are represented by this contribution; it must be stable and should not be allowed to undergo continuous change but should only be modified in the framework of the consensus-finding process.

- The concern should be presented as early as possible; i.e. it should be addressed at the most appropriate time, not at the last possibility (e.g. the DIS enquiry).

- Both good written preparation and good presentation at the relevant meeting are necessary.

- Reliable support from other countries should be sought in due time (this is better than insisting alone on a special point of view).

- The delegation should have sufficient flexibility for negotiations (otherwise the one who wants to have everything, will possibly get nothing in the end). The extent of this flexiblity has to be established by the sending national committee, and also has to be compared to the international result in the subsequent national debate.

This current study cannot give any exhaustive information. However, it is intended to try to piece together a reply to the most important questions. This relates to possible communication routes, to the typical items which may be presented on specific occasions or during certain work, and to the duties and responsibilities of certain persons and bodies. An overall survey can be found in table 11.

Some general mechanisms need still to be addressed here. As within football there is no legal means for outsiders to direct the score into a desired direction. There are, however, efficient possibilities for supporting the club, the trainer and the players. In standardization, sufficient secretariat capacity for the national committee (including at the upper end, the possibility of holding a TC or SC secretariat) and engaged experts with clear instructions from their stakeholders are essential and contribute much to international success.

There is no better means at international level to achieve influence but by engaged cooperation, sound suggestions and contributions, convincing solutions to problems and friendly but serious behaviour in the TC. Of course, all this cannot be obtained free of charge, and so the standards institutes for good reasons are always on the search for sponsors.

Table 11. Responsibilities, time periods and communications routes for certain items

Item	**Body**	**Stage**	**Access**
Important general questions of standardization policy	Council	At all times	ISO/CS via ISO member bodies
Important general technical questions, creation of new TC, decision on appeals	TMB	At all times	ISO/CS via ISO member bodies
Questions of standardization policy, **general technical questions**, approval of new projects, working structure (e.g. monitoring of WG work) and project management	TC or, if appropriate, SC	TC (or SC) meetings or written letter ballots, all stages	TC (or SC) Secretariat via ISO member bodies, or via international organizations, or, if appropriate, also via CEN
Detailed technical questions, in particular regarding the contents of standards	WG	WG meetings and communication during preparatory stage, if appropriate. During resolution of comments at the end of enquiry stage (the latter not always done systematically by WG)	WG secretariat or convenor via ISO member bodies or international organizations, also communication among experts
Design of standards, editorial questions	TC secretariat, editing committee, if appropriate WG	Stages of drafting final texts for DIS or FDIS	TC secretariat via ISO member bodies or via WG convenor

General objections to the contents, **technical comments**	TC for CD, all ISO member bodies for DIS	Committee stage, enquiry stage at the latest	TC secretariat for CD, ISO/CS for DIS, voting via ISO member bodies, comments also via international organization, if appropriate also via CEN
Decision on **approval or rejection of an ISO Standard**	All ISO member bodies	Approval stage	ISO/CS via ISO member bodies, no technical comments possible

2.2 Communication via an ISO member body

2.2.1 Principles

All possibilities of contributing to the work - from the experts' work in the working group up to the formal vote – are open to the ISO member bodies. In some cases they have to notify their intentions (e.g. to hold P-membership in a TC) before start of participation. They cannot, however, use the possibilities to influence the work exclusively at their own discretion, but instead they must represent a national point of view that takes into account all the interests of their country in a balanced way.

For this reason they run committees for the development of the national point of view to different extents, DIN in nearly all areas, smaller countries only in the sectors important for them.

Within DIN a standards committee undertakes, within its scope, the entire technical participation in international standardization. This covers sending delegations to meetings of technical committees (TCs) and subcommittees (SCs) as well as the nomination of experts for working groups (WGs). An international standards project can, however, involve several standards committees. In this case, they have to cover all the interests of the parties concerned and to apply the appropriate mechanisms for cooperation between the standards committees, one of which will have to take the leadership.

If a standards committee (usually through decision of its steering committee) has decided to participate actively in an international standards project, the technical work is assigned to a working committee ("mirror-committee"). This has to define a German position and to represent it in the international committee. The latter may happen by written comments, sending of delegations and/or nomination of experts. Usually, the mirror-committee conducts national meetings before an international meeting, in order to prepare its delegates, and afterwards in order to discuss the results.

Anyone may address the national mirror-committee, usually via the secretariat of the responsible standards committee. The secretariat will direct technically-sound concerns into the appropriate channel, if necessary, after consultation of the mirror-committee. Without doubt, however, the most efficient possibilities for exercising influence are provided by continuous particpation in the work of the national mirror-committee.

2.2.2 Possible influence of an ISO member body on a standards project

The possible influence of an ISO member body on an individual standards project depends on the status of this member within the responsible technical committee (or SC), see 1.2, and, furthermore, from the actual stage of the project. The member's attitude may vary from engaged support through neutral toleration up to open refusal.

All ISO member bodies, including those that are neither O- or P-members nor hold the secretariat of the TC or SC, are involved twice with the project, i.e. during the DIS enquiry, see 1.2.7 and 2.2.5, and during the approval of the FDIS (which may be omitted in extraordinary cases, see 1.2.8 and 2.5.6). There is no general possibility for influencing the approval of new projects, however, unless it is a completely new field of work. Interested parties therefore should look for further information from other sources, see also 2.5.1.

O-members are fully informed about the work of their TC or SC. They can comment and take part in meetings. If they think it necessary, they can actively intervene in the work by having their status in the committee changed. Otherwise, they have, like all ISO member bodies, the right to vote on DIS and FDIS.

P-members have registered for active participation in a TC or SC. It is expected that they participate in meetings, send in technical comments and reply to the letter ballots. However, they still have options as to how they handle individual projects. They can deal with the project in their role as TC-member and fulfil the commitments mentioned before. However, they can also decide to play an active part in the project (in particular by sending experts to the WG, or even by nominating a convenor). This is, among others, a prerequisite for the approval of new projects for the work programme, see 1.2.4.

2.3 Communication via an organization in liaison

The possibilities for the international organizations involved in technical work are restricted through their observer status. However, this does not mean that they may only listen and watch. They can submit suggestions for new standards projects and they can take a full part in the technical work of technical committees. They can nominate experts for the participation in working groups and they can submit comments on working drafts and committee drafts. They have, however, no right to vote at formal votes.

There are different categories of liaison. Liaison A status is given to organizations that wish to participate fully in the technical work at TC or SC level. Liaison B status is defined for organizations that wish to be merely informed . Liaison C is reserved for JTC 1 (information technology). Liaison D status means technical participation in a working group.

Following an application of an organization interested in the work of a TC, liaisons are arranged by the Central Secretariat after an enquiry within the responsible TC, and are registered centrally. They should lead to reciprocal arrangements and to full support of the TC results through the organization in liaison.

Occasionally, it is useful to have an organization in liaison present a technical concern. Their representative is not tied to a national point of view and he can often address the concern more clearly than a delegation. Frequently, he already knows possible problems, in particular with respect to horizontal topics, from discussions in other TCs.

2.4 Communication via European standardization organizations

The possibilities for CEN to exercise influence on ISO are described in the Vienna Agreement. In addition to specific project allocation (ISO lead or CEN lead) with subsequent parallel vote,

there are some communication possibilities also within other work. So ISO and CEN committees can send up to 4 representatives to the others‘ committees in related areas. However, these are not allowed to represent any national point of view but only a CEN or ISO one.

Common meetings of related ISO and CEN committees (joint meetings) are not allowed. There would be insuperable difficulties at official voting. CEN members, which at the same time are all also ISO member bodies, certainly would not be allowed to have two delegations (one for CEN, one for ISO, and with it two votes). Anyway, the special role of the Europeans is observed suspiciously by the representatives of the other economic blocks. If there is a specific demand for immediate exchange of information, difficulties are often avoided by holding meetings of the ISO/TC and the corresponding CEN/TC in immediate sequence at the same place, so that by this way the agreement of the partner committee on decisions just taken can be immediately obtained.

However, an essential aspect for a national party with a specific concern is the necessity to convince CEN first. To achieve this, there are, besides the way via the national standards institutes, also some possibilities via the sector rapporteurs or the associated members.

2.5 Possible influence at the time of certain events or situations

2.5.1 Approval of a new standards project

See 1.2.4 for formal rules for the proposal stage.

Proposals for new international standards projects within the scope of a TC may be made by the ISO member bodies, by the TC secretariat, by other technical committees, by organizations in liaison, by the Technical Management Board (TMB), or by the ISO Secretary General. There is no mandated work ordered by governmental institutions as in CEN. Up to now, international authorities exist only in exceptional cases, in particular in the international transport sector.

The decision on new standards projects is made by the ISO member bodies, i.e. by the P-members of the TC, and is made by a written vote (P-member ballot following appropriate discussion in the TC). Influence on the approval of the project (or its refusal) therefore is restricted to the ISO member bodies allowed to vote. Here, it is especially important to win over other countries as allies in order to produce an unequivocal result.

The most appropriate source for information about new projects on the agenda is the national mirror-committee. Official announcement of new projects (nationally in the standards advertising part of the „DIN-Mitteilungen“, internationally in the work-programme of the TC on the ISO website) is done, however, only after a positive decision on the proposal. If the responsible DIN standards committee had decided not to participate in the corresponding ISO body, it can be difficult to get the pertinent information. The way forward is to try to get information on essential proposals for new work individually from the secretary of the responsible standards committee, from a central service of DIN, or from communication with other experts in neighbouring countries.

It has to be noted that the scope of the future standard is already defined with the approval of the project (in fact it has to be part of the proposal). If there are certain concerns, e.g. if certain items should be excluded or others should be added, this should already have been discussed in the TC by now.

2.5.2 Meeting of a technical committee

A TC meeting is not open to everyone. In particular the following people or groups are allowed to participate: TC chairperson, TC secretariat, ISO Central Secretariat, chairpersons and

secretariats of the SCs, convenors of the WGs, delegations of the P- and O-members, representatives of the organizations in liaison (including other TCs) and, if appropriate, CEN.

In the meeting of a technical committee, not only administrative and organizational issues are dealt with (e.g. creation of working groups, nomination of experts or appointment of convernors), but also technical issues (in particular, results of CD votes and the comments submitted on that occasion) are considered and decided. The results are immediately laid down in formal resolutions which are usually approved before the end of the meeting.

Working documents must be previously submitted in writing and have to be distributed usually some weeks before the meeting. Submitting substantial suggestions only at the meeting is regarded as being counterproductive. However, it is necessary to present and explain a proposal or comment orally in the meeting. It is very helpful on this occasion if the support of other delegations with respect to a specific concern has already been secured before.

The get-together of the national delegations within a TC meeting also provides possibilities for informal exchange of information. Good opportunities for this are provided by coffee-breaks and social events. The delegates should not hesitate at these opportunities to exchange their views amongst each other and to discuss them with other delegations.

For further aspects with respect to TC delegations and their tasks see 2.6.3.

2.5.3 Written votes between TC meetings

For formal rules for the committee stage see 1.2.6.

The same catalogue of questions that would be treated in a meeting, can also be decided by the TC through written vote (letter ballot). In practice, this path is frequently used in the first instance. The agenda of the next meeting will include an item only if there are no unambiguous results from the written vote or if other problems occur.

Probably the most important object for voting is the committee draft (CD). The CD represents the consensus-based result of the WG and at this point it shall be examinated and approved by the TC. Now is the suitable time to come up with basic concerns, technical comments and other suggestions provided this was not possible previously in the WG. During the later DIS enquiry this will be more difficult. Of course, comments of ISO member bodies outside the TC will have to be accepted at this later stage. From P-members of the TC, however, it is expected that they comment as early as possible.

Here, it should be pointed out that a significant difference between ISO and CEN exists. CEN is striving to bring out the draft European standard (prEN) as early as possible in order to take into account the opinion of the public. Within ISO the objective is to bring out a DIS as perfect as possible, as a result of the work on the committee draft(s). It is remarkable that there was once no formal vote within ISO. This was introduced later for symmetry reasons according to the Vienna Agreement.

While ISO member bodies are requested to come up with a representative national attitude, no concrete procedure is defined on how to gain this. A German committee and the interested parties participating in its work should try to get a survey on the opinions of the public in good time. There is nothing standing in the way of publishing a national draft standard already on the basis of the CD. On the other hand, the later international standards number cannot be used at this stage and transparency may suffer as the visible link with the international project gets lost.

2.5.4 Work in the working group

The responsible working group has a large share in the development of an International standard. It does not decide on the scope of the future standard; this is instead laid down by the

TC. It does not decide on the formal approval of the standard either; this is reserved to the ISO member bodies in the framework of CD, DIS, and FDIS voting.

To a wide extent, however, the working group is master of the technical contents. Even if the TC does not agree with the results, it does not usually carry out any correction work itself, but refers the document back to the WG with instructions for revision. Occasionally, this revision happens directly in the framework of a TC meeting. Therefore, it is advisable for engaged WG experts to try to obtain a place in the national delegation for the TC if a meeting of the responsible WG is not scheduled anyway.

In contrast to TC delegations, the experts in the WG are not strictly bound to a national point of view. Nevertheless, they should be kept informed on the position of their national standards institute, see 2.5.5. The latter is not bound to the decision of the WG experts and can reject their work during the official voting procedures. It is self evident, however, that such an action should be taken only in justifiable cases.

In order to be accepted as an expert in a WG, one must be nominated by an ISO member body or directly from the TC. The latter may, for example, apply for experts from organizations or other TCs in liaison. Since WGs frequently do not have their own secretariat but have to ask for support from the national standards institute of the homeland of the convenor, or sometimes also from the TC secretariat, it may be difficult, even for those directly involved, to keep an actual overview of the composition of the WG.

The group of experts directly dealing with an individual project is frequently addressed as the project team, and their speaker as project leader. Usually this constellation is dissolved after the completion of the project. A working group may include several project teams. In the absence of a responsible WG, the latter can report, however, directly to the parent TC or SC.

2.5.5 DIS enquiry

For formal rules for the enquiry stage see 1.2.7.

During the enquiry on the draft International Standard, it is, in principle, already too late for serious technical comments. P-members should have preferably presented them during the CD debates. The remaining ISO member bodies outside the TC are also permitted to vote, their voices being counted separately (see also 1.2.7 and 1.3.4.3). Nevertheless, all comments submitted, especially those connected to negative votes, must be taken very seriously, and, whenever possible, a solution should be found.

The DIS enquiry is a last possibility to stop a project or lead it into the desired direction, in particular, if the TC chairman, who has to decide on the further action, can be convinced about the technical aspects. In this case, a second DIS with corrected contents can be submitted to a new enquiry. However, a single negative vote is not enough in order to reach this. The concern must instead be supported strongly by several countries.

2.5.6 FDIS voting

The FDIS voting within ISO is frankly speaking a formality. In theory, a project can still be stopped by a sufficient number of negative votes, but technical comments are no longer taken into account (see also 1.2.8 and 1.3.4.3). A corresponding alliance of several countries that might succeed in rejecting the FDIS is difficult to be reached in this stage. If such an alliance existed, the FDIS would not have come so far. Experience has shown that individual ISO member bodies that express weighty concerns for the first time on the FDIS, will become rather unpopular.

2.5.7 Appeal procedure

The appeal procedure is intended to solve problems of nonconformity to the rules, see 1.3.4.4. If it is used to complain about the technical content of a standard, there must be very serious general objections (maybe based on newest research work or something similar).

2.5.8 Adoption as national Standard

After an ISO Standard has been approved and published, it is still possible to influence its contents, but outside of ISO, at the national level. The ISO Standard may be modified technically during its adoption, see 1.6. If the national committee can be convinced, the corresponding DIN Standard (but no longer a DIN-ISO Standard) will appear with the desired changes. Of course, such modifications must be presented at a later review of the ISO Standard.

2.5.9 Possible influence in the framework of the Vienna Agreement

For formal aspects of the Vienna Agreement see 1.6.

To exercise possible influence in the framework of the Vienna Agreement is one of the most difficult practices of international standardization work. There is not only the necessity to balance three levels, but there is also the chronic conflict between theoretical claims of standardization policy and practical forces of day-to-day standardization work. Priority always should be granted to the highest possible level, i.e. the global solution, but in many cases the result must fit into the European legal framework. It is clear that this leads to continuous disputes (even if it is only about the comparatively harmless „Annex Z“).

So the Vienna Agreement is highly appreciated and deeply criticized at the same time. Its added value, in addition to the positive improvement of the information and communication between ISO and CEN, is primarily of a standards policy nature. Technically, the European countries could very easily present their interests alone within ISO. In the same way, they could adopt the ISO Standards under their own authority as national standards.

Therefore the added value mentioned before consists primarily of the common obligation to adopt the future ISO Standard in the case of a positive voting result at the CEN level. There is not only a time-profit dimension interconnected with this procedure; there is also no debate as to whether a vote on the adoption of the ISO Standard should be launched at all (the result of the parallel vote, of course, is not anticipated).

In contrast to the situation within IEC and CENELEC, where all proposals for new projects in principle are offered to the IEC and (almost) all IEC results have to pass through the CENELEC voting, CEN can still make a choice on what it wants to offer to the ISO. It has to be noted here that, within the Dresden Agreement between IEC and CENELEC, an equivalent to the sometimes confusing decision between ISO-lead and CEN-lead is unknown. Finally, it should also be mentioned that a result of a CEN-lead project changes to ISO-lead at the time of the next review.

A systematic special case is always given if European Directives enter on the stage and the pertinent mandates require an „Annex Z“, a survey of the clauses of the standard compared to the requirements of the Directive. Such a list is strictly rejected in the final ISO Standard by some ISO member bodies. While for CDs and DIS the same document is used, for pragmatic reasons, as for the CEN level, the ISO Standard and the EN will differ with respect to the relevant annex. Since this annex is declared to be informative, the rules for identical adoption are not violated.

2.6 Responsibilities and power of individual persons and bodies

2.6.1 TC chairperson

The TC chairperson is the official representative of the technical committee. Usually he is not a technical officer of a national standards institute but an expert from economy, science or legal authorities. He directs the TC internally and represents it to the outside, e.g. in discussions on principles with other TCs. He is not allowed to have any national point of view, but he must represent an international position which is defined by his TC.

It follows that the chairperson must be informed on all important technical and administrative issues that involve his TC. He is an appropriate partner for communication on issues of a general technical or standardization policy nature, and it is his duty to follow such things. However, one should not bother him with subordinate questions, and the communication channel should be chosen carefully. Persons that may address the chairperson directly – if necessary even confidentially – are, for example, the leader of a national delegation, the chairperson of another TC, his own TC secretary or also a high-ranking officer of the Central Secretariat.

2.6.2 TC secretariat

While the chairperson is the representative of the TC, so the secretary is its busy manager. The TC secretary is usually a full-time official of a national standards institute. Like the chairperson, he is not allowed to hold any national opinion, but he must represent an international position. Also he must be informed on all important issues, not only in general but in detail, at least for administrative questions. With respect to technical questions, he is always allowed to seek the advice of experts from his TC.

The TC secretariat plays the same role for the TC that is occupied by the Central Secretariat for ISO as a whole. It provides the general communication interface, which allows almost all committees and authorities of the TC to be reached. Like a secretariat of a national standards committee, the TC secretariat can be addressed on almost every issue, preferably via the secretary of the national mirror-committee. Whether there be technical comments, questions of target dates or personal issues, the TC secretary should take care of them. National individual enquiries, unless they come from a member of a national delegation, or similar instances will usually be referred by him to his responsible colleague in the relevant country of origin.

2.6.3 National TC delegation

National delegations are sent to meetings of technical committees and subcommittees. When composing and preparing its delegation, the national standards body must take care that the delegation holds a uniform national view that takes into account the opinion of all experts involved in the work. The national mirror-committee will usually select - preferably from its own ranks - experts that due to their technical knowledge and their other abilities (e.g. languages, negotiation skills) are able to represent the established goals of the mirror-committee in an appropriate way.

The delegation is nominated officially by the responsible standards committee. It is also declared who will function as the speaker (head of delegation). After the TC or SC meeting, the delegation has to report to the mirror-committee and to explain the results and their background. Theoretically, the mirror-committee could compose a new delegation for every session. However, it is of practical advantage to maintain a certain continuity and to alter the composition only if special issues on the agenda require this.

It is very important that the delegates are informed about all essential questions in detail, in particular with respect to all the committee drafts to be dealt with in the meeting. It depends on their negotiation skills whether comments already submitted in writing are accepted by the TC. It

is also necessary that appropriate room for negotiations exists to make it possible for the delegation to agree to sensible compromises.

2.6.4 WG Convenor

The WG convenor is „Primus inter Pares" within his working group. He calls the meetings of the working group and he chairs them. He may rely on the support of a secretariat when he gets one (which unfortunately very often is not the case). He is, furthermore, the liaison person to the TC which has to nominate him formally at the time of the creation of the working group. In contrast to the TC chairperson, he does not have any fixed term of office but is released on dissolution of the WG (or at his own wish).

For all technical concerns in the preparatory stage, the WG convenor (or his supporting secretariat, if it exists) is the appropriate communication partner. He can be reached via the P-members of the TC, via organizations participating in the TC or in the WG or also directly via individual experts of the WG.

2.6.5 WG experts

Working groups consist of a limited number of experts nominated in a personal capacity, who do not act as official representatives of their country but are active as personal experts. The working group is not expected to provide a consensus of countries but a reasonable technical solution to the initial problem. Nevertheless, the experts should keep contact with the responsible technical committee of their country in order to exchange information with the latter, and to come to an agreement on the national position.

Experts may be nominated not only from the ISO member bodies (P- and O-members), but also from the parent committee itself. They are also allowed to come from organizations that have only observer status in the parent committee. ISO member bodies should involve experts whom they did not nominate themselves, but who were nominated by the parent committees, as guests in their own work. While these experts will primarily represent the technical opinion of their organizations, they should, however, also be informed about the national point of view, with the goal of involving them in the definition of the nationalposition. If the interface between experts and mirror-committee does not work, this may lead to the later rejection of the drafts developed by the WG by the ISO member body.

2.6.6 Political and technical steering committees: ISO Council and TMB

Questions of occupational health and safety can also be discussed at this level, by Council, if they are of standardization policy nature, and by TMB, if they are of general technical nature. Usually on these occasions, only important topics that involve ISO as a whole, or at least a certain number of ISO member bodies, are dealt with. An individual national concern should therefore only be brought up here if it has also supranational meaning.

The members of the steering and coordination bodies of ISO are elected to be representatives of all ISO member bodies (some of them, e.g. DIN, are standing members). They do not represent individual national positions but the interests of ISO in toto. The persons nominated by the DIN management therefore have to hold a balanced view that takes into account the total interests of ISO and DIN. In this framework, the opinions of the involved committees (e.g. ISO/TCs, DIN standards committees) as well as the general interests of ISO and DIN have to be considered.

The DIN standards committees are informed about all questions relevant for them, and they have to deliver supporting material for the German representatives in an appropriate way. They also have to report, without being asked, on all technical problems that might lead to discussions at international level.

The tasks of the TMB cover, in addition to creation and dissolution of TCs, the general monitoring of work programmes, areas of responsibility and other questions of principle in the technical work, and in particular also the further development of the Directives for the technical work. For this purpose, the TMB holds a standing maintenance team in the Central Secretariat, whose findings are, of course, submitted in a commentary phase to all ISO member bodies before they are officially decided by the TMB.

2.6.7 ISO Central Secretariat

The Central Secretariat (ISO/CS) is the general communication interface, which enables its clients to reach almost all committees and other bodies. The CS has wide-ranging responsibility and power as far as its own work is concerned but it must, however, submit general political or technical questions to the responsible committees. The CS is in continual touch with all TC secretariats. It is itself responsible for the secretariats of the General Assembly, Council and TMB, the Policy Committees and the advisory groups interconnected with these bodies. It conducts the DIS enquiries and the FDIS formal votes (but not the letter ballots for the CDs), it performs final editing and publishes the International Standards.

The CS can be addressed on almost every issue. However, this is restricted to a certain group of clients: ISO member bodies, international technical and governmental organizations, TC chairpersons and secretaries, ITU, IEC and CEN. Enquiries from individual national sources are usually passed on to the responsible ISO member body.

3 Participation of the OHS sector in international standardization

3.1 Technical ISO bodies relevant for the OHS sector

Within ISO, in particular at TC level, the representation of individual technical sectors is not given the same high importance as is given in national standardization. This is because of the obligation of the national delegates, as mentioned before, to represent all interests of their country. In a meeting the TC secretary will, therefore, keep an eye on the appearance of a German delegation rather than on the immediate representation of the OHS sector.

This phenomenon is less distinct within the working groups. Here, the technical experts are among themselves and not directly bound to the instruction of their national committee. A good convenor, of course, will monitor that the expertise necessary for the treatment of a standard is adequately represented.

There exists, however, highly regretted by DIN, no formal obligation of the ISO member bodies to provide a continuous secretariat to the WGs for which they have taken responsibility. The mailing list for the working group therefore often lies in the hands of the convenor, and immediately the TC secretary has trouble in following it completely. Consequently, it can be easily determined which countries and, if appropriate, international technical organizations participate in a certain TC, but not whether they have included explicit representatives of the OHS sector in their TC delegations or even included them in the working groups.

The data presented in this section and the conclusions derived from them are primarily used to identify the relevant committees. ISO Standards relevant for the OHS sector can be found in particular in the following areas of the International Classification of Standards (ICS):

- **ICS 13 Environment. Health protection. Safety**

- **ICS 25 Manufacturing engineering**

- **ICS 53 Materials handling equipment**

Further individual items can be found in

- **ICS 17 Metrology and measurement**

- **ICS 29.260.25 Electrical apparatus for explosive atmospheres**

- **ICS 91 Construction materials and building**

The technical committees can be of interest to the OHS sector due to various reasons. In particular there are the following types of TC (the designation A, B, C, ... is used here ad hoc and has no general significance):

- **Group A**: TCs or SCs dealing with basic provisions relevant for the OHS sector, e. g. TC 159 *Ergonomics*

- **Group B:** TCs or SCs dealing with „classical“ **risks relevant for the OHS sector**, e. g. TC 43/SC 1 *Noise*

- **Group C:** TCs or SCs, which deal with **measures of protection relevant for the OHS sector**, e. g. TC 94 *Personal safety – Protective clothing and equipment*

- **Group D:** TCs or SCs, which deal with **items relevant for the OHS sector in connection with certain technologies**, e.g. TC 44/SC 9 *Welding and allied processes; Health and safety*

- **Group E**: TCs or SCs, which deal with **individual sets of products and their characteristics relevant to the OHS sector**, e. g. TC 118/SC 3 *Pneumatic tools and machines*

On the basis of these considerations and with the help of some lists showing the current participation in different fields of work, 79 relevant TCs and SCs have been selected (see annex D for complete data). The following characteristics are of special interest within the given framework:

- **Number and name** of the TC or SC. The number permits conclusions about the age of the TC (the smaller the number, the older the TC; an exception is JTC 1, which was formerly ISO/TC 97).

- **Secretariat and chairperson**. Usually, secretary and chairperson come from the same country (the secretariat has the privilege to propose a chairperson to the TC). Countries, therefore, are only mentioned explicitly, if there are deviations from this principle. In 24 % of the cases, DIN holds the secretariat.

- **Number of the working groups** (with indication of the countries of origin of the convenor), and, if appropriate for TCs, also the number of SCs. These data relate to the complexity of the TC or SC structure.

- **Number of the ISO Standards** already published. This statement mirrors the current work results (however, the history, i. e. former editions, is not taken into account). For a TC with SCs, a distinction is made within the work programme as to whether standards and projects are assigned directly to the TC or to one of its SCs. In these cases, two values (without and with SCs) are given.

- **Number of the current projects**. This value describes the size of the current working programme. Regarding the TCs with SCs, the same principle applies as for the number of standards.

- **Number of the P- and O-members** (see also annex G). These values show the active interest (commitment to active participation) and also the passive interest (need for information) of the ISO member bodies.

- **Number of the liaisons** with other TCs and international organizations (see also annex I). These values show the interest of related ISO/TCs and external organizations in the work of the TC. The liaison data given are as shown on the ISO website on 1 May 2005.

Obviously the interest in a TC or SC and its work is reflected by the numbers of its P- and O-members and its liaisons. The selection of 79 technical bodies given in annex D is presented again in the following table 12 (according to total numbers) and table 13 (according to types).

More individual values are given in annex D. For those cases where some TCs in liaison are not themselves detailed in annex D, a list of all TCs (without SCs) can be found in annex E.

The given selection of 79 TCs and SCs is not necessarily relevant exclusively for the OHS sector. A typical example is TC 21 on fire protection and fire fighting. Of course, the measures and appliances standardized by this TC are of great benefit for the safety of the persons working in a building. Equally, they are also relevant for the other users of the building (visitors, customers ...) and finally for the protection of the building itself. Nevertheless fire protection is a

central topic which has to be mentioned here.

A similar consideration applies for individual working groups. For example, WG 33 of TC 43/SC 1 (on noise) deals with sound measurement on different road surfaces which is probably more interesting for the protection of the environment. TC 45/SC 1/WG 3 on hydraulic hoses is rather difficult to assign. On the other hand, TC 130/WG 5 on ergonomics and security in graphic technology seems to be fully involved in OHS questions. A concrete assignment of individual projects to individual WGs, however, is not possible with the available data.

Table 12. Selection of TCS and SCs relevant for the OHS sector, in the sequence of the overall number of participating members and other bodies (P-members + O-members + liaison-TCs + liaison organizations)

Se-quence	TC/SC No.	Title	Type	P-m.	O-m.	L-TC	L-org.
94	TC 44	Welding and allied processes	D	30	36	16	12
93	TC 43/SC 1	Noise	B	24	16	37	16
87	TC 159	Ergonomics	A	25	28	24	10
83	TC 21	Equipment for fire protection and fire fighting	C	26	40	7	10
82	TC 43	Acoustics	B	25	35	8	14
81	TC 146	Air quality	B	24	45	9	3
78	TC 145	Graphical symbols	C	15	31	28	4
77	TC 136	Furniture	E	28	34	7	8
76	TC 94	Personal safety – Protective clothing and equipment	C	29	32	6	9
67	TC163	Thermal performance and energy use in the built environment	D	22	27	9	9
67	TC 178	Lifts, escalators and moving walks	E	25	26	11	5
66	TC 184	Industrial automation systems and integration	D	21	22	17	6
64	TC 96	Cranes	E	21	26	10	7
64	TC 131	Fluid power systems	E	16	23	22	3
60	TC 199	Safety of machinery	E	27	20	12	1

Table 12. (continued)

58	TC 188	Small craft	E	21	18	15	4
56	TC 39	Machine tools	E	20	21	11	4
56	TC 110	Industrial trucks	E	17	18	14	7
55	TC 105	Steel wire ropes	E	17	29	4	5
54	TC 159/SC 1	Ergonomic guiding principles	A	18	14	18	4
54	TC 159/SC 3	Anthropometry and biomechanics	A	18	13	18	5
51	TC 29	Small tools	E	18	28	2	3
50	TC 130	Graphic technology	D	11	24	10	5
50	TC 158	Analysis of gases	B	13	28	5	4
48	TC 23/SC 3	Tractors and machinery for agriculture and forestry; safety and comfort of the operator	E	20	13	9	6
48	TC 101	Continuous mechanical handling equipment	E	11	25	7	5
46	TC 44/SC 5	Testing and inspection of welds	D	23	17	3	3
46	TC108/SC 4	Human exposure to mechanical vibration and shock	B	19	12	9	6
45	TC 82	Mining	D	8	34	1	2
45	TC 94/SC 13	Protective clothing	C	24	19	2	0
45	TC 111	Round steel link chains, chain slings, components and accessories	E	12	22	7	4
45	TC 159/SC 4	Ergonomics of human-system interaction	A	25	6	9	5
44	TC 23/SC 2	Tractors and machinery for agriculture and forestry; common tests	E	18	14	8	4
44	TC45/SC 1	Hoses (rubber and plastics)	E	21	12	10	1
43	TC 44/SC 6	Resistance welding	D	18	19	3	3
43	TC 94/SC 1	Head protection	C	22	17	0	4
42	TC 44/SC 8	Equipment for gas welding, cutting and allied processes	D	18	18	2	4
42	TC 195	Building construction machinery and equipment	E	12	21	8	1
41	TC 22/SC 13	Ergonomics applicable to road vehicles	E	12	18	6	5
40	TC 23/SC 6	Equipment for crop protection	E	14	18	1	7
40	TC 116	Space heating appliances	E	10	21	4	5
39	TC 85/SC 2	Radiation protection	B	21	10	1	7
39	TC 159/SC 5	Ergonomics of the physical environment	A	18	7	7	7
38	TC 94/SC 3	Foot protection	C	20	14	1	3
37	TC 23/SC 15	Machinery for forestry	E	14	14	4	5
37	TC 146/SC 3	Ambient atmospheres	B	15	20	1	1
37	TC 148	Sewing machines	E	10	18	6	3
36	TC23/SC 13	Powered lawn and garden equipment	E	11	16	4	5
36	TC 58/SC 4	Operational requirements for gas cylinders	E	21	12	0	3
36	TC 94/SC 4	Personal equipment for protection against falls	C	12	22	1	1
35	TC 94/SC 6	Eye protection	C	20	14	1	0
35	TC 108/SC 3	Use and calibration of vibration and shock measuring instruments	B	16	17	1	1
34	TC 86/SC 1	Safety and environmental requirements for refrigerating systems	E	15	17	1	1

Table 12. (continued)

34	TC 110/SC 2	Safety of powered industrial trucks	E	16	9	6	3
34	TC 146/SC 2	Workplace atmospheres	B	13	19	1	1
34	TC 184/SC 2	Robots for industrial environments	D	18	10	3	3
34	TC 214	Elevating work platforms	E	15	16	3	0
32	TC 29/SC 5	Grinding wheels and abrasives	E	17	13	1	1
32	TC 44/SC 9	Welding and allied processes; health and safety	D	19	9	2	2
32	TC 118/SC 3	Pneumatic tools and machines	E	12	14	5	1
32	TC 127/SC 2	Earth-moving machinery; safety requirements and human factors	E	18	7	5	2
32	TC 145/SC 2	Safety identification; signs, shapes, symbols and colours	C	15	12	3	2
30	TC 23/SC 17	Manually portable forest machinery	E	15	11	3	1
30	TC 96/SC 5	Cranes; use, operation and maintenance	E	19	11	0	0
28	TC 94/SC 14	Fire-fighters' personal equipment	C	22	5	0	1
27	TC 72/SC 5	Industrial laundry and dry-cleaning machinery and accessories	E	10	6	5	6
27	TC 94/SC 12	Hearing protection	C	16	10	1	0
27	TC 96/SC 6	Mobile cranes	E	17	9	1	0
26	TC 96/SC 7	Tower cranes	E	16	10	0	0
25	TC 39/SC 6	Noise of machine tools	E	15	6	1	3
24	TC 20/SC 9	Air cargo and ground equipment	E	7	12	3	2
24	TC 94/SC 15	Respiratory protective devices	C	20	4	0	0
24	TC 127/SC 3	Earth-moving machinery; operation and maintenance	E	15	9	0	0
22	TC39/SC 4	Woodworking machines	E	9	11	0	2
20	TC 145/SC 3	Graphical symbols for use on equipment	C	7	5	8	0
20	JTC 1/SC 35	Information technology; user interfaces	D	12	7	1	0
18	TC 72/SC 8	Safety requirements for textile machinery	E	9	5	4	0
16	TC 5/SC 11	Metal hoses and expansion joints	E	9	5	1	1
13	TC 39/SC 10	Safety of machine tools	E	11	1	0	1

Table 13. Selection of TCs and SCs relevant for the OHS sector, in the sequence of types and within the types according to the overall number of participating members and other bodies (P-members + O-members + liaison-TCs + liaison organizations)

Sequ.	TC/SC No.	Title	Type	P-mbr.	O-mbr.	L-TC	L-org.
Type A. Basic provisions relevant for the OHS sector							
87	TC 159	Ergonomics	A	25	28	24	10
54	TC 159/SC 1	Ergonomic guiding principles	A	18	14	18	4
54	TC 159/SC 3	Anthropometry and biomechanics	A	18	13	18	5
45	TC 159/SC 4	Ergonomics of human-system interaction	A	25	6	9	5
39	TC 159/SC 5	Ergonomics of the physical environment	A	18	7	7	7
Type B. Risks relevant for the OHS sector							
93	TC 43/SC 1	Noise	B	24	16	37	16
82	TC 43	Acoustics	B	25	35	8	14
81	TC 146	Air quality	B	24	45	9	3
50	TC 158	Analysis of gases	B	13	28	5	4
46	TC108/SC 4	Human exposure to mechanical vibration and shock	B	19	12	9	6
39	TC 85/SC 2	Radiation protection	B	21	10	1	7
37	TC 146/SC 3	Ambient atmospheres	B	15	20	1	1
35	TC 108/SC 3	Use and calibration of vibration and shock measuring instruments	B	16	17	1	1
34	TC 146/SC 2	Workplace atmospheres	B	13	19	1	1
Type C. Measures of protection relevant for the OHS sector							
83	TC 21	Equipment for fire protection and fire fighting	C	26	40	7	10
78	TC 145	Graphical symbols	C	15	31	28	4
76	TC 94	Personal safety – Protective clothing and equipment	C	29	32	6	9
45	TC 94/SC 13	Protective clothing	C	24	19	2	0
43	TC 94/SC 1	Head protection	C	22	17	0	4
38	TC 94/SC 3	Foot protection	C	20	14	1	3
36	TC 94/SC 4	Personal equipment for protection against falls	C	12	22	1	1
35	TC 94/SC 6	Eye protection	C	20	14	1	0
32	TC 145/SC 2	Safety identification; signs, shapes, symbols and colours	C	15	12	3	2
28	TC 94/SC 14	Fire-fighters' personal equipment	C	22	5	0	1
27	TC 94/SC 12	Hearing protection	C	16	10	1	0
24	TC 94/SC 15	Respiratory protective equipment	C	20	4	0	0
20	TC 145/SC 3	Graphical symbols for use on equipment	C	7	5	8	0

Type D. Items relevant for the OHS sector in connection with certain technologies							
94	TC 44	Welding and allied processes	D	30	36	16	12
67	TC163	Thermal performance and energy use in the built environment	D	22	27	9	9
66	TC 184	Industrial automation systems and integration	D	21	22	17	6
50	TC 130	Graphic technology	D	11	24	10	5
46	TC 44/SC 5	Testing and inspection of welds	D	23	17	3	3
45	TC 82	Mining	D	8	34	1	2
43	TC 44/SC 6	Resistance welding	D	18	19	3	3
42	TC 44/SC 8	Equipment for gas welding, cutting and allied processes	D	18	18	2	4
34	TC 184/SC 2	Robots for industrial environments	D	18	10	3	3
32	TC 44/SC 9	Welding and allied processes; health and safety	D	19	9	2	2
20	JTC 1/SC 35	Information technology; user interfaces	D	12	7	1	0
Type E. Sets of products and their characteristics relevant to the OHS sector							
7	TC 136	Furniture	E	28	34	7	8
67	TC 178	Lifts, escalators and moving walks	E	25	26	11	5
64	TC 96	Cranes	E	21	26	10	7
64	TC 131	Fluid power systems	E	16	23	22	3
60	TC 199	Safety of machinery	E	27	20	12	1
58	TC 188	Small craft	E	21	18	15	4
56	TC 39	Machine tools	E	20	21	11	4
56	TC 110	Industrial trucks	E	17	18	14	7
55	TC 105	Steel wire ropes	E	17	29	4	5
51	TC 29	Small tools	E	18	28	2	3
48	TC 23/SC 3	Tractors and machinery for agriculture and forestry; safety and comfort of the operator	E	20	13	9	6
48	TC 101	Continuous mechanical handling equipment	E	11	25	7	5
45	TC 111	Round steel link chains, chain slings, components and accessories	E	12	22	7	4
44	TC 23/SC 2	Tractors and machinery for agriculture and forestry; common tests	E	18	14	8	4
44	TC45/SC 1	Hoses (rubber and plastics)	E	21	12	10	1
42	TC 195	Building construction machinery and equipment	E	12	21	8	1
41	TC 22/SC 13	Ergonomics applicable to road vehicles	E	12	18	6	5
40	TC 23/SC 6	Equipment for crop protection	E	14	18	1	7
40	TC 116	Space heating appliances	E	10	21	4	5
37	TC 23/SC 15	Machinery for forestry	E	14	14	4	5
37	TC 148	Sewing machines	E	10	18	6	3
36	TC23/SC 13	Powered lawn and garden equipment	E	11	16	4	5

Table 13, type E. (Continued)

36	TC 58/SC 4	Operational requirements for gas cylinders	E	21	12	0	3
34	TC 86/SC 1	Safety and environmental requirements for refrigerating systems	E	15	17	1	1
34	TC 110/SC 2	Safety of powered industrial trucks	E	16	9	6	3
34	TC 214	Elevating work platforms	E	15	16	3	0
32	TC 29/SC 5	Grinding wheels and abrasives	E	17	13	1	1
32	TC 118/SC 3	Pneumatic tools and machines	E	12	14	5	1
32	TC 127/SC 2	Earth-moving machinery; safety requirements and human factors	E	18	7	5	2
30	TC 23/SC 17	Manually portable forest machinery	E	15	11	3	1
30	TC 96/SC 5	Cranes; use, operation and maintenance	E	19	11	0	0
27	TC 72/SC 5	Industrial laundry and dry-cleaning machinery and accessories	E	10	6	5	6
27	TC 96/SC 6	Mobile crane	E	17	9	1	0
26	TC 96/SC 7	Tower cranes	E	16	10	0	0
25	TC 39/SC 6	Noise of machine tools	E	15	6	1	3
24	TC 20/SC 9	Air cargo and ground equipment	E	7	12	3	2
24	TC 127/SC 3	Earth-moving machinery; operation and maintenance	E	15	9	0	0
22	TC39/SC 4	Woodworking machines	E	9	11	0	2
18	TC 72/SC 8	Safety requirements for textile machinery	E	9	5	4	0
16	TC 5/SC 11	Metal hoses and expansion joints	E	9	5	1	1
13	TC 39/SC 10	Safety (of machine tools)	E	11	1	0	1

As a first result, both tables show that the specific field of work has no significant influence on the interest shown for the committee. On one hand table 12 is well mixed, on the other hand table 13 also does not show any defined leadership of one of the five groups A to E over the others.

On the other hand, the need for information of the ISO member bodies and the international liaison organizations can be seen very clearly; in fact it even exceeds the wish for technical participation. All together, there are within the selected 79 committees 1363 P-memberships (countries holding secretariat obtain P-status automatically), 1357 O-memberships, 494 TCs and 292 international organizations in liaison status.

It may be assumed that not only O-members primarily want to be informed, but that also TCs with liaison status mostly have the goal to observe what their neighbours are doing, and that half of the international organizations want to participate in the technical work, and the other half only to observe (clear information about this ratio is not available). The result is a relationship of 1588 workers (P-members and half of the international organizations) to 1997 observers. Within this environment the real P-members of the TCs hold a share of 38,9 % of all interested groups.

This observation is supported by the fact that for all TC types (with one single exception in group B, i. e. TC 43/SC 1 on noise) the parent technical committees get more interest than their subordinate SCs. However, technical committees with SCs deal primarily with the coordination and monitoring of the overall work programme (in the framework of the ISO Directives, SCs can work quite independently within their scope). So the TCs themselves usually process only a few basic standards (sometimes no standards projects at all).

Nevertheless, it is obvious that many ISO-members hope to get more information and influence through membership in the TCs than through the relatively work-intensive participation in the SCs doing the technical work. It must be pointed out here that memberships in TCs and SCs are not rigidly connected but selectable. A P-membership in a SC is not tied to a P-membership in the parent TC, or vice versa.

Furthermore, the successful approval of new projects is connected to the commitment of 5 P-members to participate actively in these projects (see also 1.2.4 and 2.2.2). With an average number of 17 P-members for the 79 committees considered here, a project may therefore be undertaken already with a share of 29,4 % of the P-members (that is 11,4 % of all interested groups in the TC or SC). These data support the thesis expressed previously (see also 2.1) that the best way to get possible influence in ISO standardization is the concrete offer of technically competent cooperation, preferably under the leadership of an ISO member body that can guarantee a balanced representation of interests.

3.2 Participation of European countries in ISO bodies relevant for the OHS sector

When looking at annex D with the data of 79 selected committees relevant to the OHS sector, and the decentralized distribution of the work of the TCs, SCs and WGs, the intensive commitment of the European countries is, additionally, obvious. 55 of 79 possible secretariats (i.e. 70 %) of these committees are in the hands of CEN members, 19 secretariats (i.e. 24 %) are held by DIN.

In addition to the number of the secretariats, the number of working groups, and of P- and O-memberships, are also characteristic values for the participation of the countries. Here, another interesting fact emerges: The distribution of the P- and O-memberships is significantly different for the European countries compared to the totality of the countries involved in the 79 committees considered. While there are altogether 1363 P-memberships (including the secretariat's countries) and 1357 O-memberships (i.e. a relationship P to O of 1,004), there are 776 P-memberships and 524 O-memberships from the Europeans (i.e. a relationship P to O of 1,481).

With the (arbitrary) evaluation factors

1 for O-membership,
2 for working group responsibility, or for P-membership
3 for TC or SC secretariats responsibility

the order shown in table 14 emerges.

(Position number = 3 x number of secretariats + 2 x number of working groups + 2 x number of P-memberships + 1 x number of O-memberships)

Table 14. Participation of European countries (CEN members) in 79 technical ISO bodies (see annex D) relevant for the OHS sector

Position-number	Country	Secre-tariats	Working groups	P-member-ships	O-member-ships
300	Germany	19	63	57	3
249	United Kingdom	10	42	67	1
213	France	10	27	61	7
165	Sweden	6	10	62	3
160	Italy	0	6	70	8
134	Netherlands	1	9	48	17
119	Poland	1	2	38	36
114	Belgium	0	1	46	20
113	Spain	0	1	35	41
110	Finland	1	1	36	33
107	Austria	0	1	40	25
107	Czech Republic	0	0	37	33
107	Switzerland	4	4	34	19
77	Slovakia	0	0	12	50
76	Denmark	3	1	23	28
73	Hungary	0	0	10	50
64	Norway	0	2	17	23
62	Ireland	0	1	10	40
59	Portugal	0	0	16	26
30	Greece	0	0	1	27
13	Iceland	0	0	0	12
7	Estonia	0	0	0	7
7	Slovenia	0	0	0	7
5	Luxembourg	0	0	1	2
3	Lithuania	0	0	0	3
1	Malta	0	0	0	2
1	Cyprus	0	0	0	1
0	Latvia	0	0	0	0

Nobody will be astonished to see the „big Europeans" dominating this list. The intensive participation of many middle and small countries, however, in particular those from middle and eastern Europe, perhaps might be surprising. Here it is worth looking for allies, especially those who are P-members in the respective committees. Annex G gives a survey of the assignment of the countries to the individual bodies as given in annex D, essentially with regard to their P- and O-memberships. While the data given there are subject to continuous change, they nevertheless will provide a starting point for further investigations.

3.3 Participation of international organizations in ISO bodies relevant for the OHS sector

As mentioned in 2.3, international (and in practice also many Europe-oriented) technical organizations take part in the technical work of ISO as observers with different liaison types. In annex D, the organizations that hold liaisons to a committee are mentioned in the third column.

These organizations may be subdivided into different categories, i.e.

- political or governmental organizations (e.g. EC, OECD, UN/ECE)
- general scientific organizations (e.g. IUPAP)
- special sector organizations (e.g. ICRU, IIR, IIW)
- traffic-oriented organizations (e.g. IATA, ICAO, UIC)
- manufacturer associations (e.g. CECIMO, EUMABOIS, FEM)
- single interest syndicates (for example CI)

Unfortunately it cannot be read from the available data how intensive the actual cooperation might be, or whether it leads to a fruitful exchange or remains merely on paper. Also the question of whether these organizations represent interests relevant to the OHS sector or at least take these interests into account, is not unequivocally clarified here.

In annex I, a selection of the organizations mentioned in annex D is presented in more detail. The selection has been made arbitrarily, based on external appearances, as to whether an involvement in OHS questions might be regarded as possible or probable. In the event of interest, the relevant TC secretariat or the organization itself should be able to provide more information.

Annex A
Access to the original wording of the ISO Directives

In December 2004 the 5th editions of ISO/IEC Directives, Part 1 and Part 2 were published. Part 1 deals with the development, and Part 2 deals with the presentation of International Standards. These rules apply for ISO as well as for IEC.

At present, both former supplements to Part 1 (ISO Supplement and IEC Supplement), and also the document called „Consolidated ISO Procedures“ are out of date. It has been announced by ISO, however, that they will be adapted in a short time. However, the Directives have only been changed substantially with respect to a few aspects which are not of primary importance within the framework of this study.

The relevant texts can be found on the ISO Internet site using the following link:

http://isotc.iso.org/isotcportal/index.html

This leads to the ISOTC portal page where, after clicking on „Standards Development Processes“ and „Development Procedures“, the documents can be easily found .

Both parts of the Directives are quite extensive. For the purpose of finding ones‘ way more easily, the contents lists of both are reprinted as follows .

Note of the author: This is, of course, more relevant in the original German version, where a German translation of the contents lists is given.

ISO/IEC Directives, Part 1, Procedures for the technical work (contents)

2 Development of International Standards

2.1 The project approach
2.2 Preliminary stage
2.3 Proposal stage
2.4 Preparatory stage
2.5 Committee stage
2.6 Enquiry stage
2.7 Approval stage
2.8 Publication stage
2.9 Maintenance of standards
2.10 Technical corrigenda and amendments
2.11 Maintenance agencies
2.12 Registration authorities
2.13 Copyright
2.14 Reference to patented items

3 Development of othe deliverables

3.1 Technical Specifications
3.2 Publicly Available Specifications (PAS)
3.3 Technical Reports

4 Meetings

4.1 General
4.2 Procedure for calling a meeting
4.3 Languages at meetings
4.4 Cancellation of meetings

5 Appeals

5.1 General
5.2 Appeal against a subcommittee decision
5.3 Appeal against a technical committee decision
5.4 Appeal against a technical management board decision
5.5 Progress of work during an appeal process

Annex A Guides
Annex B ISO/IEC procedures for liaison and work allocation
Annex C Justification of proposals for the establishment of standards (covering C.7 on a new field of technical activity, and C.8 on a new work item)
Annex D Resources of secretariats, and qualifications of secretaries
Annex E General policy on the use of languages
Annex F Options for development of a project (covering F.2 on „Fast Track“)
Annex G Maintenance agencies
Annex H Registration authorities

ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards (contents)

Annex B
Notes on the participation of DIN standards committees (NA) in European and international standardization bodies

1 General (see Guideline (RL) for NA, 2 and 12.7)

1.1 A standards committee (NA) is responsible for participation in the European and international standardization work within its scope. This covers sending delegations to meetings of Technical Committees (TCs) as well as the nomination of experts for working groups (WGs).

1.2 A European and equally an international standards project may be relevant for several NAs. In this case the appropriate modes of cooperation between the NAs (see RL for NA, 12.7) have to be applied in order to cover the interests of all parties concerned.

2 National delegations in Technical Committees and Subcommittees (see CEN/CLC Internal Regulations Part 2, 2.3.2, and ISO Directives Part 1, Foreword, c and 1.7.1)

2.1 National delegations are sent to meetings of Technical Committees and Subcommittees. When forming and preparing its delegation, the responsible national standards body has to ensure that its delegation represents a coherent national point of view which takes into consideration the opinions of all parties concerned by the relevant work.

3 Experts in European and international working groups

3.1 (see ISO Directives Part 1, 1.10.1, and CEN/CLC Internal Regulations Part 2, 2.5.2)

Working groups consist of a limited number of experts nominated in a personal capacity, who do not act as official representatives of their country but as individual experts. It is, however, highly recommended that they keep contact with the responsible technical body of their country in order to keep this body informed and to gain knowledge on the national position.

3.2 (see CEN-Document on Guidance for the work of working groups, 2.5)

Experts may be nominated by the national standards bodies (NSB) and also by the parent committee itself. Experts are also allowed to come from organizations with only observer status in the parent committee. The national standards bodies will be kept informed on the experts from their country who have not been nominated by themselves, in order for them to establish appropriate contacts. This is to minimize the risk that the resulting draft will later on be rejected by the NSB.

4 Recommendations for the NA

4.1 Mirror committee

If a NA (usually through a decision of its steering committee) has decided to participate actively in the work on a European or international standards project, the technical responsibility will be allocated to a working committee ("mirror committee"). This has to define the German position and to represent it within the European and/or international body. The latter may be done by written comments, sending of delegations, and/or nomination of experts.

4.2 Sending delegations and nominating experts

When sending delegations and/or nominating experts, the mirror committee will choose competent persons – preferably from its own membership – who are able due to their technical knowledge and other capabilities (e. g. language and negotiation skills) to represent the aims defined by the mirror committee in an appropriate manner.

4.3 National delegations

The national delegation to the meeting of an international or European TC or SC will be announced officially by the responsible NA. On this occasion, the person who will act as speaker (head of delegation) will also be identified. The delegation has to represent as far as possible the national position defined by consensus of the mirror committee. After the TC or SC meeting, the delegation has to report to the mirror committee and to explain the results and their background. In theory, the mirror committee could decide on a new composition of the delegation for each meeting. In practice, however, it is advantageous to keep a certain continuity, and to change the composition only in cases where this is necessary due to new specific work items on the agenda.

4.4 Experts

4.4.1 Experts are nominated in a personal capacity for participation in European and international working groups, and they participate in the work of the WG until completion of the project or until there is an official withdrawal of their nomination. In accordance with European and international rules they are not considered as official representatives of their country but as personal experts with quite a wide latitude for negotiation in technical questions.

4.4.2 For this reason the mirror committee should chose these experts very carefully and keep them involved in the process of defining the German position so that they understand the national aims and intended ways of procedure, and are able to evaluate the possible consequences of technical decisions. The experts should keep in mind that, if there is no active cooperation between the experts and the committee nominating them, this may lead to the later rejection by the NA or DIN of the results of the work in which they have participated. The experts nominated by the mirror committee should, therefore, be in a position to identify with the national position and the intended ways of procedure.

4.4.3 If experts from Germany are nominated for the working groups by the parent committee (e.g. from the ranks of the Associate Members or organizations in liaison), and not by the mirror committee, DIN will be informed of this. In such cases, the mirror committee should invite these experts, e.g as guests, to its meetings, and arrange a detailed exchange of information with them. While these experts will primarily present the technical opinion of their - usually European or international - organizations or associations, they should also be informed about the German point of view in order to involve them in the definition of the national opinion. This will also contribute to minimizing the risk that a draft is subsequently rejected by the NSB.

5 Participation in the steering and coordination committees

5.1 The German representatives in the steering and coordination committees of CEN (e.g. CEN Administrative Board and CEN Technical Board) are nominated by the DIN Management in a personal capacity. They hold a balanced view that is consistent with the total interests of the DIN. This view can be based on the opinion of a single NA, on the consensus opinion of several NAs, or on a general policy of DIN.

5.2 The members of the steering and coordination committees of ISO (e.g. ISO Council and ISO Technical Management Board) are chosen on behalf of the entire ISO membership, and therefore they do not represent national positions but instead they represent the interests of all ISO members. The people nominated by the management of DIN hold a balanced view that takes into account the total interests of ISO and also of DIN. The opinions of the directly involved committees (e.g. ISO/TC, NA of DIN), as well as the general interests of ISO and DIN, have to be taken into consideration.

5.3 The NAs are therefore informed about relevant questions, and they have to support the German representatives in the steering and coordination committees in a suitable manner. They also have to inform them, without special request, about any technical problems that might lead to a discussion at European or international level.

Annex C
Access to the original wording of the Vienna Agreement

The Vienna Agreement is a general political document. Within this study it may be more up-to-date and interesting to look at the Guidelines for the Implementation of the Agreement on Technical Cooperation between ISO and CEN, which describe the various procedures. The relevant texts can be found on the ISO Internet site using the following link:

http://isotc.iso.org/isotcportal/index.html

This leads to the ISOTC portal page where, after clicking on „Standards Development Processes“ and „Parallel projects with CEN (Vienna Agreement)“, the documents can be easily found.

While the Vienna Agreement provides the political background, the Guidelines present more details on possible procedures. For the purpose of finding ones‘ way more easily the contents lists of both are reprinted as follows.

Note of the author: This is, of course, more relevant in the original German version, where a German translation of the contents lists is given.

Agreement on Technical Cooperation between ISO and CEN (Vienna Agreement)

Guidelines for the implementation of the Agreement on Technical Cooperation between ISO and CEN (Vienna Agreement)

Annex D
Selection of ISO/TCs and SCs relevant for OHS

TC x/SC y, title, secretariat, chairperson	**Working groups, standards and projects, P- and O-members (see also Annex G)**	**Liaisons with other TCs, liaisons with external organizations (see also Annex I)**
JTC 1/SC 35 Information technology; User interfaces Secr.: AFNOR (France), Ms. Cappel-Souquet Chair: Dr. Neuville	8 WGs: WG 1 (SCC), WG 2 (JISC), WG 3, 4, 6, 7, 8 (vacant), WG 5 (AFNOR) ISO Standards: 23 Projects: 5 P-members: 12 O-members: 7	TC 159/SC 4
TC 5/SC 11 **Metal hoses and expansion joints** Secr.: SNV (Switzerland), Mr. Schenk Chair: Mr. Meyer	6 WGs: WG 1, 3 (UNI), WG 2 (BSI), WG 4, 5, 6 (SNV) ISO Standards: 6 Projects: 0 P-members: 9 O-members: 5	IEC/SC 31A AEQ
TC 20/SC 9 **Air cargo and ground equipment** Secr.: AFNOR (France), Ms. Antoine Chair: Mr. Springer (USA)	1 WG: WG 1 (NEN) ISO Standards: 50 Projects: 13 P-members: 7 O-members: 12	TC 104, TC 122, TC 145 IATA, ICAO
TC 21 **Equipment for fire protection and fire fighting** Secr.: KATS (Rep. Korea), Dr. Park Chair: Mr. Knight (UK)	2 WGs: WG 1 (BSI), WG 3 (DIN); 6 further SCs ISO Standards: 10, with SCs: 62 Projects: 2, with SCs: 35 P-members: 26 O-members: 40	TC 11, TC 59, TC 92, TC 94, TC 145/SC 3, TC 188, IEC/TC 64 CEA-insurance, CEIR, CTIF, EC, EURALARM, EUROFEU, ILO, IMO, UN/ECE, WCO
TC 22/SC 13 **Ergonomics applicable to road vehicles** Secr.: ANSI (USA), Ms. Ameredes Chair: Mr. Rupp	4 WGs: WG 3, 5, 7 (ANSI), WG 8 (DIN) ISO Standards: 15 Projects: 10 P-members: 12 O-members: 18	TC 23, TC 127, TC 145, TC 145/SC 3, TC 159, TC 204 CLEPA, EC, OICA, UN/ECE, WHO

TC 23/SC 2 **Tractors and machinery for agriculture and forestry; Common tests** Secr.: ANSI (USA), Ms. Seitz Chair: Mr. Durant	2 WGs: WG 6, 7 (ANSI) ISO Standards: 30 Projects: 3 P-members: 18 O-members: 14	TC 22/SC 5, TC 31/SC 5, TC 70, TC 70/SC 8, TC 108/SC 4, TC 110/SC 2, TC 127/SC 1, TC 131 CEMA, EC, OECD, UN/ECE
TC 23/SC 3 **Tractors and machinery for agriculture and forestry; Safety and comfort of the operator** Secr.: DIN (Germany), Mr. Alt Chair: Mr Bennet (USA)	No WG ISO Standards: 12 Projects: 3 P-members: 20 O-members: 13	TC 22/SC 12, 13, 16 und 17, TC 43/SC 1, TC 110/SC 2, TC 127/SC 2, TC 159/SC 3, 5 CEMA, EC, ILO, OECD, UN/ECE, WHO
TC 23/SC 6 **Equipment for crop protection** Secr. : AFNOR (France), Mme. Duranton Chair : M. Morel	9 WGs: WG 3 (AFNOR), WG 4 and 5 (BSI), WG 6, 7, 9 and 10 (DIN), WG 8 (AENOR), WG 11 (UNI) ISO Standards: 25 Projects: 11 P-members: 14 O-members: 18	TC 45/SC 1 CEMA, CIGR, FAO, IAMFE, OECD, UN/ESCAP, WHO
TC 23/SC 13 **Powered lawn and garden equipment** Secr.: ANSI (USA) Ms. Seitz Chair : Mr. Tetteroo	6 WGs: WG 2 and 13 (ANSI), WG 4 and 5 (BSI), WG 14 and 15 (DIN) ISO Standards: 15 Projects: 4 P-members: 11 O-members: 16	TC 43/SC 1, TC 108/SC 4, IEC/TC 21, IEC/SC 61F CI, EC, EGMF, OECD, OPEI
TC 23/SC 15 **Machinery for forestry** Secr.: SFS (Finland), Mr. Olkinuora Chair: Prof. Haarlaa	2 WGs: WG 2 (ANSI); Joint WG under TC 127/SC 2 ISO Standards: 16 Projects: 3 P-members: 14 O-members: 14	TC 127, TC 127/SC 1, 2 and 3 CEA-agriculture, CEMA, EC, FAO, OECD
TC 23/SC 17 **Manually portable forest machinery** Secr.: SIS (Sweden), Mr. Thesslin Chair: Mr. Husberg (Finland)	4 WGs: WG 1, 2, 3 (SIS), WG 4 (BSI) ISO Standards: 32 Projects: 3 P-members: 15 O-members: 11	TC 28/SC 4, TC 43/SC 1, TC 108/SC 4 ILO

TC 29 **Small tools** Secr.: AFNOR (France), Mr. Dudognon Chair: Mr. Freyermuth	4 WGs: WG 33 (DIN), WG 34, 35, 36 (AFNOR); 5 further SCs ISO Standards: 58, with SCs: 373 Projects: 11, with SCs: 40 P-members: 18 O-members: 28	TC 39, TC 184/SC 1 CIRP, EC, WCO
TC 29/SC 5 **Grinding wheels and abrasives** Secr.: DIN (Germany), Mr. Schiefer Chair: Mr. Clarke (United Kingdom)	7 WGs: WG 2, 3, 4, 5, 6, 7 and 8 (all DIN) ISO Standards: 72 Projects: 6 P-members: 17 O-members: 13	TC 39 WCO
TC 39 **Machine tools** Secr.: SNV (Switzerland), Mr. Eder Chair: Dr. Knapp	3 WGs: WG 7, 9 (DIN); 1 JWG under TC 29 5 further SCs ISO Standards: 37, with SCs: 143 Projects: 5, with SCs: 28 P-members: 20 O-members: 21	JTC 1, TC 14, TC 28, TC 29, TC 43, TC 43/SC 1, TC 108, TC 145, TC 184, TC 184/SC 1, IEC/TC 44 CECIMO, CIRP, EC, WCO
TC 39/SC 4 **Woodworking machines** Secr.: DIN (Germany), Dr. Licher Chair: vacant	No WG ISO Standards: 39 Projects: 0 P-members: 9 O-members: 11	No TC in liaison EC, EUMABOIS
TC 39/SC 6 **Noise of machine tools** Secr.: DIN (Germany), Mr. Mack Chair: Mr. Neugebauer	No WG ISO Standards: 2 Projects: 1 P-members: 15 O-members: 6	TC 43 CECIMO, EPPMP, EUMABOIS
TC 39/SC 10 **Safety (of machine tools)** Secr.: SNV (Switzerland), Mr. Eder Chair: Dr. Knapp	1 WG: WG 3 (DIN) ISO Standards: 0 Projects: 1 P-members: 11 O-members: 1	No TC in liaison CECIMO

TC 43 **Acoustics** Secr.: DS (Denmark), Mr. Nielsen Chair: Dr. Brinkmann (Germany)	3 WGs: WG 1 (SN), WG 6, 7 (DIN), 2 further SCs ISO Standards: 26, with SCs: 177 Projects: 4, with SCs: 58 P-members: 25 O-members: 35	TC 12, TC 72, TC 108, TC 159/SC 5, IEC/TC 29, IEC/TC 79, IEC/TC 87, IEC/TC 100 AUDI, BIAP, EBU, EC, IATA, ICAO, ICBEN, ILO, IUPAP, OECD, OIML, UN/ECE, UNESCO, WHO
TC 43/SC1 **Noise** Secr.: DS (Denmark), Mr. Nielsen Chair: Dr. Brinkmann (Germany)	17 WGs: WG 17 (DS), WG 22, 51, 52 (DIN), WG 23 (JISC), WG 27, 33, 39 (SIS), WG 28, 40, 42, 45 (ANSI), WG 31, 38 (NEN), WG 53 (SN); 2 JWGs under TC 127/SC 2 and TC 188 ISO Standards: 113 Projects: 37 P-members: 24 O-members: 16	TC 4, TC 12, TC 20, TC 22, TC 22/SC 22 and 23, TC 23/SC 2, 3, 13, 15 and 17, TC39, TC 39/SC 6, TC 60, TC 72/SC 8, TC 86/SC 5 and 6, TC 94/SC 12, TC 108, TC 110/SC 2, TC 115, TC 117, TC 118, TC 118/SC 6, TC 127/SC 2, TC 131/SC 8, TC 144/SC 4, TC 148, TC 188, TC 192, TC 195, TC 199, IEC/TC 2, IEC/TC 5, IEC/SC 17A, IEC/TC 29, IEC/TC 59 BIAP, CONCAWE, EC, ECMA, ETSI, I-INCE, IATA, ICAO, ICBEN, ILO, IUF, IUPAP, OIML, UIC, UN/ECE, WHO
TC 44 **Welding and allied processes** Secr.: AFNOR (France), Mr. Chapelain Chair: Mr. Gourmelon	2 WGs: WG 1 and 2 (ANSI); 9 further SCs ISO Standards: 2, with SCs: 218 Projects: 1, with SCs: 71 P-members: 30 O-members: 36	TC 5, TC 10, TC 10/SC 1, TC 11, TC 17/SC 17, TC 26, TC 58, TC 79, TC 94, TC 107, TC 119, TC 135, TC 153/SC 1, TC 164, TC 167/SC 1, IEC/TC 26 CECT, EC, ECCS, EIGA, EWA, GAS-EUROSOUD, IIW, ILO, OTIF, UIC, UN/ESCAP, WCO
TC 44/SC 5 **Testing and inspection of welds** Secr.: ANSI (USA), Mr. Davis Chair: Mr. Gray	1 WG: WG 1 (JISC) ISO Standards: 20 Projects: 18 P-members: 23 O-members: 17	TC 135, TC 164, 164/SC 5 EC, ECCS, IIW

TC 44/SC 6 **Resistance welding** Secr.: DIN (Germany), Mr. Zernitz Chair: Mr. Bothfeld	3 WGs: WG 1 (JISC), WG 2 (AFNOR), WG 3 (DIN) ISO Standards: 34 Projects: 11 P-members: 18 O-members: 19	TC 26, TC 164/SC 5, IEC/TC 26 EWA, IIW, WCO
TC 44/SC 8 **Equipment for gas welding, cutting and allied processes** Secr.: DIN (Germany), Mr. Zernitz Chair: Prof. Ziegler	4 WGs: WG 2, 5 and 6 (DIN), WG 3 (BSI) ISO Standards: 24 Projects: 6 P-members: 18 O-members: 18	TC 45, TC 131 EIGA, GAS-EUROSOUD, IIW, WCO
TC 44/SC 9 **Welding and allied processes; Health and safety** Secr.: BSI (United Kingdom), Mr. Slot Chair: Mr. Brown (USA)	3 WGs: WG 1 (AFNOR), WG 2 (vacant), WG 3 (ANSI) ISO Standards: 6 Projects: 2 P-members: 19 O-members: 9	TC 58, TC 94 IIW, ILO
TC 45/SC 1 **Hoses (rubber and plastics)** Secr.: DSM (Malaysia), Ms. Iyampillai Chair: Mr. Robertson (United Kingdom)	4 WGs: WG 1, 2 and 4 (BSI), WG 3 (JISC) ISO Standards: 77 Projects: 28 P-members: 21 O-members: 12	TC 8/SC 3, TC 21/SC 2, TC 22, TC 44/SC 8, TC 61/SC 6, TC 67, TC 121, TC 131/SC 4, TC 188, TC 220 OCIMF
TC 58/SC 4 **Operational requirements for gas cylinders** Secr.: ANSI (USA), Ms. Angerman Chair: Mr. Smith	6 WGs: WG 1 (BSI), WG 2, 4, 6 (AFNOR), WG 3, 5 (ANSI) ISO Standards: 18 Projects: 12 P-members: 21 O-members: 12	No TC in liaison AEGPL, ECMA-Cylinder, EIGA
TC 72/SC 5 **Industrial laundry and dry-cleaning machinery and accessories** Secr.: AFNOR (France), Mme Saillet Chair: M. Grandpierre	2 WGs: WG 2 (UNI), WG 3 (AFNOR) ISO Standards: 13 Projects: P-members: 10 O-members: 6	TC 38, TC 38/SC 1 and 2, TC 91, TC 130 CINET, ELMO, EURATEX, GINETEX, IDRC, ISTCL

TC 72/SC 8 **Safety requirements for textile machinery** Secr.: DIN (Germany), Mr. Fichtner Chair: Dr. Schubert	2 WGs: WG 1 and 2 (DIN) ISO Standards: 8 Projects: 1 P-members: 9 O-members: 5	TC 43/SC 1, TC 159, TC 199, IEC/TC 44
TC 82 (Stand By) **Mining** Secr. : DIN (Germany), Mr. Michaely Chair: vacant	4 further SCs (all Stand By) ISO Standards: 10, with SCs: 36 P-members: 8 O-members: 34	TC 211 EC, WCO
TC 85/SC 2 **Radiation protection** Secr.: AFNOR (France), Mr. Diakonoff Chair: Mr. Pauli	12 WGs: WG 2 (DIN), WG 4, 5, 17, 18 and 22 (AFNOR), WG 11 and 13 (SCC), WG 14 (ANSI), WG 19 (vacant), WG 20 (ON), WG 21 (AFNOR/BSI) ISO Standards: 50 Projects: 22 P-members: 21 O-members: 10	IEC/SC 62C EC, IAEA, ICRP, ICRU, ILO, OIML,WHO
TC 86/SC 1 **Safety and environmental requirements for refrigerating systems** Secr.: ANSI (USA), Mr. Tucker Chair: Mr. Folempin	No WG ISO Standards: 1 Projects: 1 P-members: 15 O-members: 17	IEC/SC 61D IIR
TC 94 **Personal safety – Protective clothing and equipment** Secr.: SA (Australia), Ms. Trad Chair: Mr. Apsey	No WG; 8 further SCs ISO Standards: 1, with SCs: 79 Projects: 0, with SCs: 37 P-members: 29 O-members: 32	TC 22, TC 44, TC 44/SC 9, TC 159, TC 159/SC 3, IEC/TC 78 CIE, EC, ETSA, EURATEX, ILO, IMO, IUF, WCO, WHO
TC 94/SC 1 **Head protection** Secr.: ANSI (USA), Ms. Bradley Chair: Mr. Byrnes	2 WGs: WG 4 (vacant), WG 5 (ANSI) ISO Standards: 1 Projects: 0 P-members: 22 O-members: 17	No TC in liaison EC, IMMA, UN/ECE, WHO

TC 94/SC 3 **Foot protection** Secr.: BSI (United Kingdom), Mr. Upstone Chair: Mr. Turner	No WG ISO Standards: 17 Projects: 2 P-members: 20 O-members: 14	TC 45 EC, ILO, WHO
TC 94/SC 4 **Personal equipment for protection against falls** Secr.: SA (Australia), Ms. Pitt Chair: Mr. Chapman (United Kingdom)	6 WGs: WG 2 (SCC), WG 3 and 5 (ANSI), WG 4 and WG 7 (BSI), WG 6 (SA) ISO Standards: 9 Projects: 3 P-members: 12 O-members: 22	TC 159 ILO
TC 94/SC 6 **Eye protection** Secr.: BSI (United Kingdom), Mr. Yelland Chair: Mr. Clarke	5 WGs: WG 1 and 4 (BSI), WG 2 (ANSI), WG 3 (UNI), WG 5 (SNV) ISO Standards: 9 Projects: 0 P-members: 20 O-members: 14	TC 172/SC 7
TC 94/SC 12 **Hearing protection** Secr.: SA (Australia), Ms. Trad Chair: vacant	2 WGs: WG 1 and 2 (BSI) ISO Standards: 0 Projects: 0 P-members: 16 O-members: 10	TC 43
TC 94/SC 13 **Protective clothing** Secr.: SNV (Switzerland), Mr. Schenk Chair: Dr. Eichinger	5 WGs: WG 1 (SA), WG 2 and 6 (ANSI), WG 3 (IBN), WG 5 (SFS) ISO Standards: 38 Projects: 17 P-members: 24 O-members: 19	TC 38/SC 19, TC 159/SC 5
TC 94/SC 14 **Fire-fighters' personal equipment** Secr.: SA (Australia), Ms. Trad Chair: Mr. Smith	5 WGs: WG 1 (SA), WG 2 (BSI), WG 3 (SCC), WG 4 (ANSI), WG 5 (NSAI) ISO Standards: 4 Projects: 9 P-members: 22 O-members: 5	No TC in liaison ETSA

TC 94/SC 15 **Respiratory protective devices** Secr.: DIN (Germany), Mr. Baur Chair: Mr. Drews	3 WGs: WG1 (BSI), WG 2 and 3 (DIN) ISO Standards: 0 Projects: 6 P-members: 20 O-members: 4	No liaison
TC 96 **Cranes** Secr.: BSI (United Kingdom), Mr. Read Chair: Mr. Wray	9 further SCs ISO Standards: 2, with SCs: 79 Projects: 0, with SCs: 25 P-members: 21 O-members: 26	TC 67, TC 98, TC 101, TC 111, TC 127, TC 145, TC 159, TC 167, TC 195, TC 199 EC, FEM, ILO, OIPEEC, UN/ECE, UN/ESCWA, WCO
TC 96/SC 5 **Cranes; Use, operation and maintenance** Secr.: JISC (Japan), Mr. Ouchi Chair: Mr. Suzuki	No WG ISO Standards: 10 Projects: 4 P-members: 19 O-members: 11	No liaison
TC 96/SC 6 **Mobile cranes** Secr.: ANSI (USA), Mr. Wendler Chair: Mr. Eckstine	No WG ISO Standards: 16 Projects: 7 P-members: 17 O-members: 9	TC 110/SC 2
TC 96/SC 7 **Tower cranes** Secr.: AFNOR (France), Ms. Lecler Chair: Mme Dussaugey	No WG ISO Standards: 12 Projects: 7 P-members: 16 O-members: 10	No liaison
TC 101 **Continuous mechanical handling equipment** Secr.: DIN (Germany), Mr. Weih Chair: Mr. Dietz	No WG ISO Standards: 37 Projects: 0 P-members: 11 O-members: 25	TC 41, TC 96, TC 100, TC 111, TC 159, TC 178, IEC/TC 44 APF, EC, FEM, ILO, WCO
TC 105 **Steel wire ropes** Secr.: BSI (United Kingdom), Mr. Read Chair: Mr. Allen	No WG ISO Standards: 26 Projects: 1 P-members: 17 O-members: 29	TC 20, TC 82/SC 3, TC 96/ SC 3, TC 111/SC 3 EC, EWRIS. OIPEEC, UN/ESCAP, WCO

TC 108/SC 3 **Use and calibration of vibration and shock measuring instruments** Secr.: DS (Denmark), Mr. Nielsen Chair: Mr. Licht	3 WGs: WG 1 (BSI), WG 6 and 10 (ANSI) ISO Standards: 27 Projects: 4 P-members: 16 O-members: 17	IEC/TC 29 OIML
TC 108/SC 4 **Human exposure to mechanical vibration and shock** Secr.: DIN (Germany), Mr. Hansen Chair: Dr. Christ	5 WGs: WG 3 (DIN), WG 5 and 8 (SCC), WG 9 (SIS), WG 11 (JISC) ISO Standards: 19 Projects: 5 P-members: 19 O-members: 12	TC 23/SC 2, 15 and 17, TC 43, TC 98, TC 110, TC 118/SC 3, TC 127, TC 159 CEMA, ILO, IMO, PNEUROP, UIC, WHO
TC 110 **Industrial trucks** Secr.: DIN (Germany), Mr. Kasper Chair: Mr. Tannhäuser	1 JWG under TC 104; 3 further SCs ISO Standards: 2, with SCs: 17 Projects: 0, with SCs: 18 P-members: 17 O-members: 18	TC 20/SC 9, TC 22, TC 31, TC 51, TC 100, TC 104, TC 105, TC 108, TC 122, TC 127, TC 145, TC 159 IEC/TC 21, IEC/TC 69 EC, FEM, ICB, ICHCA, ILO, UN/ESCWA, WCO
TC 110/SC 2 **Safety of powered industrial trucks** Secr.: BSI (United Kingdom), Ms. Shannon Chair: Mr. Simpson	7 WGs: WG 1 (SCC), WG 2, 5, 10 (ANSI), WG 3 and 11 (DIN), WG 7 (BSI) ISO Standards: 29 Projects: 17 P-members: 16 O-members: 9	TC 70, TC 96/SC 6, TC 108/ SC 2, TC 127/SC 2, TC 214, IEC/TC 69 FEM, ILO, UN/ESCWA
TC 111 **Round steel link chains, chain slings, components and accessories** Secr.: BSI (United Kingdom), Mr. Read Chair: Mr. Bailes	1 WG: WG 1 (BSI); 2 further SCs ISO Standards: 0, with SCs: 17 Projects: 0, with SCs: 5 P-members: 12 O-members: 22	TC 17, TC 82, TC 96, TC 101, TC 104, TC 105, TC 188 EC, EWRIS, FEM, ILO
TC 116 **Space heating appliances** Secr. and Chair: vacant	1 WG: WG 1 (AFNOR); 1 further SC ISO Standards: 4, with SCs: 5 Projects: 0 P-members: 10 O-members: 21	TC 30, TC 117, TC 161, TC 163 AFECOR, EC, EUROVENT/CECOMAF, IGU, WCO

TC 118/SC 3 **Pneumatic tools and machines** Secr.: SIS (Sweden), Ms. Lind-Bath Chair: Mr. Quensel	3 WGs: WG 3 (SIS), WG 4 (ANSI), WG 5 (BSI) ISO Standards: 25 Projects: 3 P-members: 12 O-members: 14	TC 28/SC 4, TC 29/SC 5, TC 108/SC 4, TC 131, IEC/SC 59J PNEUROP
TC 127/SC 2 **Earth-moving machinery; Safety requirements and human factors** Secr.: ANSI (USA), Ms. Desautels Chair: Mr. Roley	5 WGs: WG 3 (BSI), WG 4 (DIN), WG 5 (JISC), 2 JWGs under TC 23/SC 15 and TC 127 ISO Standards: 44 Projects: 19 P-members: 18 O-members: 7	TC 23/SC 3, TC 131/SC 2, 4 and 9, TC 159/SC 3 CECE, ILO
TC 127/SC 3 **Earth-moving machinery; Operation and maintenance** Secr.: JISC (Japan), Mr. Nishiwaki Chair: Mr. Kotake	1 WG: WG 2 (DIN) ISO Standards: 26 Projects: 5 P-members: 15 O-members: 9	No liaison
TC 130 **Graphic technology** Secr.: DIN (Germany), Ms. Weber Chair: Dr. Dolezalek	11 WGs: WG 1 (BSI), WG 2, 5 and 7 (ANSI), WG 3, 4 and 6 (DIN); 4 JWGs under TC 42 and TC 171 ISO Standards: 45 Projects: 19 P-members: 11 O-members: 24	TC 6, TC 6/SC 2, TC 35, TC 38/SC 1, TC 42, TC 171, TC 211, JTC 1/SC 28 and 29, IEC/TC 100 CEPE, CIE, ERA, ICC-colour, IFRA-inca-fiej
TC 131 **Fluid power systems** Secr.: ANSI (USA), Ms. Boehme Chair: Mr. Berninger	2 WGs: WG 1 (AFNOR), WG 4 (DIN); 9 further SCs ISO Standards: 4, with SCs: 190 Projects: 5, with SCs: 60 P-members: 16 O-members: 23	TC 4/SC 7, TC 5, TC 20, TC 20/SC 10, TC 22/SC 2, TC 23/SC 4, TC 28, TC 28/ SC 4, TC 43/SC 1, TC 44/ SC 8, TC 108, TC 112, TC 115, TC 118, TC 118/SC 6, TC 127, TC 127/SC 4, TC 153, TC 199, TC 207, IEC/TC 3, IEC/TC 65 CETOP, OIML, WCO
TC 136 **Furniture** Secr.: SIS (Sweden), Ms. Sellerholm Chair: Mr. Wadling	3 WGs: WG 1, 2 und 3 (all vacant) ISO Standards: 22 Projects: 3 P-members: 28 O-members: 34	TC 45, TC 59/SC 3, TC 61, TC 110/SC 3, TC 159, TC 162, TC 173 EC, EURATEX, FENA, GINETEX, RI, UEA-furniture, UN/ECE, WCO

TC 145 **Graphical symbols** Secr.: BSI (United Kingdom), Mr. Stratton Chair: Ms Schwuchow (Germany)	4 WGs: WG 3 and 5 (BSI), WG 6 (ANSI), JWG 11 together with IEC/SC 3C (JISC); 3 further SCs ISO Standards: 5, with SCs: 15 Projects: 2, with SCs: 46 P-members: 15 O-members: 31	TC 10, TC 10/SC 1 und 8, TC 20, TC 20/SC 9, TC 22, TC 22/SC 13, TC 23, TC 27/SC 1, TC 37, TC 38, TC 39, TC 59, TC 67, TC 70, TC 72/SC 9, TC 76, TC 82, TC 96, TC 108, TC 110, TC 159, TC 181, TC 184, TC 184/SC 5, JTC 1, IEC/TC 3, IEC/SC 3C AISE, EC, ICAO, ICOGRADA
TC 145/SC 2 **Safety identification, signs, shapes, symbols and colours** Secr.: DIN (Germany), Ms. Rosenkranz-Wuttig Chair: Mr. Bischof	4 WGs: WG 1 (DIN), WG 2, 3 and 4 (BSI) ISO Standards: 5 Projects: 41 P-members: 15 O-members: 12	TC 8/SC 1, TC 23/SC 14, IEC/SC 3C ICOGRADA, ILS
TC 145/SC 3 **Graphical symbols for use on equipment** Secr.: ANSI (USA), Ms. Seitz Chair: Ms. Hooker	2 WGs: WG 1 (ANSI), WG 2: vacant ISO Standards: 1 Projects: 0 P-members: 7 O-members: 5	TC 21, TC 22/SC 13 and 23, TC 23/SC 14, TC 38/SC 11, TC 106/SC 4, TC 210, IEC/SC 3C
TC 146 **Air quality** Secr.: DIN (Germany), Dr. Kordecki Chair: Mr. Sneek (Netherlands)	No WG; 6 further SCs ISO Standards: 0, with SCs: 75 Projects: 0, with SCs: 24 P-members: 24 O-members: 45	TC 22, TC 69, TC 112, TC 147, TC 158, TC 190, TC 207, TC 209, IEC/SC 65D IAEA, ICAO, WMO
TC 146/SC 2 **Workplace atmospheres** Secr.: ANSI (USA), Mr. Schlecht Chair: Dr. Harper	6 WGs: WG 1 and 3 (ANSI), WG 2, 4 and 7 (BSI), WG 5 (SCC) ISO Standards: 19 Projects: 4 P-members: 13 O-members: 19	TC 158 IMA-Europe
TC 146/SC 3 **Ambient atmospheres** Secr.: ANSI (USA), Mr. Puzak Chair: Dr. Rook	2 WGs: WG 1 and 8 (SCC) ISO Standards: 20 Projects: 1 P-members: 15 O-members: 20	TC 156 WMO

TC 148 **Sewing machines** Secr.: DIN (Germany), Ms. Eberl Chair: Mr. Haak	2 WGs: WG 3 (vac.), WG4 (DIN) ISO Standards: 7 Projects: 1 P-members: 10 O-members: 18	TC 38, TC 43, TC 43/SC 1, TC 72, IEC/TC 44, IEC/TC 61 CELIMAC, EURATEX, WCO
TC 158 **Analysis of gases** Secr.: NEN (Netherlands), Mr. Costenoble Chair: Mr. Hafkenscheidt	6 WGs: WG 1, 4 and 6 (DIN), WG 2 and 3 (NEN), WG 5 (BSI) ISO Standards: 18 Projects: 2 P-members: 13 O-members: 28	TC 22, TC 28, TC 47, TC 146, TC 193 EC, EIGA, GERG, OIML
TC 159 **Ergonomics** Secr.: DIN (Germany), Mr. Krebs Chair: Mr. Schultetus	1 WG: WG 2 (JISC), 4 further SCs ISO Standards: 0, with SCs: 72 Projects: 1, with SCs: 39 P-members: 25 O-members: 28	TC 20, TC 22, TC 23, TC 43, TC 59, TC 94, TC 94/SC 4, TC 96, TC 101, TC 106, TC 108/SC 4, TC 110, TC 118, TC 118/SC 3, TC 127/SC 2, TC 133, TC 136, TC 137, TC 145, TC 173, TC 199, TC 205, IEC/TC 56, IEC/TC 65 CIB, EC, ECMA, ICSID, IEA-ergonomics, ILO, IUF, RI, UNI-network, WHO
TC 159/SC 1 **Ergonomic guiding principles** Secr.: DIN (Germany), Mr. Krebs Chair: Mr. Schultetus	3 WGs: (all DIN) ISO Standards: 4 Projects: 2 P-members: 18 O-members: 14	TC 8, TC 20, TC 22, TC 23, TC 43, TC 59, TC 94, TC 101, TC 106, TC 108/SC 4, TC 110, TC 118/SC 3, TC 127/SC 2, TC 133, TC 136, TC 137, TC 145, TC 150 IEA-ergonomics, ILO, RI, WHO
TC 159/SC 3 **Anthropometry and biomechanics** Secr.: JISC (Japan), Mr. Hattori Chair: Prof. Itani	4 WGs: WG 1 and 5 (JISC), WG 2 and 4 (NEN) ISO Standards: 11 Projects: 7 P-members: 18 O-members: 13	TC 8, TC 20, TC 22, TC 22/SC 12 and 13, TC 23, TC 23/SC 3, TC 59, TC 94, TC 101, TC 106, TC 110, TC 127, TC 127/SC 2, TC 133, TC 136, TC 137, TC 199 ICSID, IEA-ergonomics, ILO, RI, WHO

TC 159/SC 4 **Ergonomics of human-system interaction** Secr.: BSI (United Kingdom), Mr. Alcorta Chair: Mr. Stewart	6 WGs: WG 1 (JISC), WG 2, 3 and 5 (DIN), WG 6 and 8 (BSI) ISO Standards: 38 Projects: 19 P-members: 25 O-members: 6	TC 23/SC 14, TC 43, TC 110, TC 127/SC 2, TC 145, JTC 1/SC 7 and 35, IEC/TC 39, IEC/TC 100 CIE, ECMA, ICSID, IEA-ergonomics, ITU
TC 159/SC 5 **Ergonomics of the physical environment** Secr.: BSI (United Kingdom), Mr. Alcorta Chair: Prof. Parsons	3 WGs: WG 1 (DIN), WG 2 (BSI), WG 3 (NEN) ISO Standards: 19 Projects: 10 P-members: 18 O-members: 7	TC 43, TC 94/SC 13, TC 96, TC 108/SC 4, TC 146, TC 163, JTC 1 CIB, CIE, EC, ICBEN, IEA-ergonomics, ILO, RI
TC 163 **Thermal performance and energy use in the built environment** Secr.: SIS (Sweden), Ms. Andersson Chair: Prof. Elmroth	1 WG: WG 2 (JWG TC 163-160-162; SCC); 3 further SCs ISO Standards: 9, with SCs: 49 Projects: 2, with SCs: 31 P-members: 22 O-members: 27	TC 33, TC 59/SC 3, TC 61/SC 10, TC 87, TC 160, TC 160/SC 2, TC 162, TC 203, TC 205 CIB, EC, EUMEPS, EURIMA, EuroWindoor, FESI, RILEM, UN/ECE, WCO
TC 178 **Lifts, escalators and moving walks** Secr.: AFNOR (France), Ms. Michelet Chair: Mr. Lamalle	8 WGs: WG 2 and 7 (AFNOR), WG 4 (SCC), WG 5 (DIN), WG 6 (BSI), WG 8 (ANSI), WG 9 (SA), WG 10 (KATS) ISO Standards: 19 Projects: 6 P-members: 25 O-members: 26	TC 10, TC 41, TC 51, TC 59, TC 92, TC 101, TC 105, TC 111, TC 159, TC 173, TC 199 CIB, EC, ELA, ICHCA, RI
TC 184 **Industrial automation systems and integration** Secr.: AFNOR (France), Ms. Hermetet-Filez Chair: Mr. Chatelard	4 further SCs ISO Standards: 2, with SCs: 309 Projects: 0, with SCs: 146 P-members: 21 O-members: 22	TC 8, TC 39, TC 108/SC 5, TC 145, TC 154, TC 199, TC 213, JTC 1, JTC 1/SC 25 and 32, IEC/TC 1, IEC/TC 3, IEC/TC 22G, IEC/TC 44, IEC/TC 65, IEC/SC 65C, IEC/TC 93 AECMA-STAN, ASAM, CECIMO, CIRP, EC, UN/ECE
TC 184/SC 2 **Robots for industrial environments** Secr.: SIS (Sweden) Mr. Lafvas Chair: Mr. Norlin	No WG ISO Standards: 14 Projects: 1 P-members: 18 O-members: 10	TC 39, TC 44, IEC/TC 44 AECMA-STAN, IFR, UN/ECE

TC 188 **Small craft** Secr.: SIS (Sweden), Ms. Velander Chair: Mr. Lagerkvist	28 WGs: WG 1, 6, 7, 10, 16, 19, 23, 24, 25, 27 and 29 (ANSI), WG 2, 3, 15, 17, 20 and 21 (AFNOR), WG 4, 14 and 28 (DIN), WG 5 and 13 (SIS), WG 22 (BSI), JWG 28 (UNI), WG 9, 11, 12 and 18 (vacant) ISO Standards: 68 Projects: 26 P-members: 21 O-members: 18	TC 8, TC 8/SC 1 and 7, TC 21, TC 43/SC 1, TC 45/SC 1, TC 61, TC 70, TC 83, TC 105, TC 111, TC 115, TC 145, IEC/TC 18, IEC/TC 64 AEGPL, EBA-boating, EC, ICOMIA
TC 195 **Building construction machinery and equipment** Secr.: PKN (Poland), Mr. Rozbiewski Chair: vacant	7 WGs: WG 2 and 3 (PKN), WG 4 and 8 (JISC), WG 5 and 6 (DIN), WG 7 (ANSI) ISO Standards: 11 Projects: 11 P-members: 12 O-members: 21	TC 43, TC 43/SC 1, TC 96, TC 108, TC 118, TC 127, TC 199, TC 214 CECE
TC 199 **Safety of machinery** Secr.: DIN (Germany), Dr. Thom Chair: Mr. Sutter (Switzerland)	6 WGs: WG 1 (AFNOR), WG 2 (BSI), WG 3, 5 and 6 (DIN), WG 4 (NEN) ISO Standards: 24 Projects: 9 P-members: 27 O-members: 20	TC 43, TC 43/SC 1, TC 72/SC 8, TC 131, TC 159, TC 159/SC 3, TC 178, TC 184, IEC/TC 16, IEC/TC 44, IEC/TC56, IEC/TC 65 CI
TC 214 **Elevating work platforms** Secr.: ANSI (USA), Ms. Rajchel Chair: Mr. Eckstine	2 WGs: WG 1 (ANSI), WG 2 (SCC) ISO Standards: 4 Projects: 5 P-members: 15 O-members: 16	TC 110/SC 2, TC 195, IEC/TC 78

Annex E
Technical Committees (TCs) of ISO

TCs referred to in Annex D (or which are parent committees of SCs mentioned there) are printed in **bold**.

TC-Number, Title of TC (Secretariat's country)

JTC 1 Information technology (USA)

TC 1 Screw threads (China)
TC 2 Fasteners (Germany)
TC 4 Rolling bearings (Sweden)
TC 5 Ferrous metal pipes and metallic fittings (Switzerland)
TC 6 Paper, board and pulps (Canada)
TC 8 Ships and marine technology (Japan)
TC 10 Technical product documentation (Sweden)

TC 11 Boilers and pressure vessels (USA)
TC 12 Quantities, units, symbols, conversion factors (Sweden)
TC 14 Shafts for machinery and accessories (Germany)
TC 17 Steel (Japan)
TC 18 Zinc and zinc alloys (Belgium)
TC 19 Preferred numbers - STAND BY (France)
TC 20 Aircraft and space vehicles (USA)

TC 21 Equipment for fire protection and fire fighting (Rep. Korea)
TC 22 Road vehicles (France)
TC 23 Tractors and machinery for agriculture and forestry (France)
TC 24 Sieves, sieving and other sizing methods (Germany)
TC 25 Cast irons and pig irons (United Kingdom)
TC 26 Copper and copper alloys (Germany)
TC 27 Solid mineral fuels (South Africa)
TC 28 Petroleum products and lubricants (USA)
TC 29 Small tools (France)
TC 30 Measurement of fluid flow in closed conduits (United Kingdom)

TC 31 Tyres, rims and valves (USA)
TC 33 Refractories (United Kingdom)
TC 34 Food products (Hungary)
TC 35 Paints and varnishes (Netherlands)
TC 36 Cinematography (USA)
TC 37 Terminology and language and content resources (Austria)
TC 38 Textiles (United Kingdom)
TC 39 Machine tools (Switzerland)
TC 41 Pulleys and belts (including veebelts) (France)
TC 42 Photography (USA)
TC 43 Acoustics (Denmark)
TC 44 Welding and allied processes (France)
TC 45 Rubber and rubber products (Malaysia)
TC 46 Information and documentation (France)

TC 47 Chemistry (Japan)
TC 48 Laboratory glassware and related apparatus (Germany)

TC 51 Pallets for unit load method of materials handling (United Kingdom)
TC 52 Light gauge metal containers (France)
TC 54 Essential oils (Spain)
TC 58 Gas cylinders (United Kingdom)
TC 59 Building construction (Norway)
TC 60 Gears (USA)

TC 61 Plastics (USA)
TC 63 Glass containers United Kingdom)
TC 67 Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries (USA)
TC 68 Financial services (USA)
TC 69 Applications of statistical methods (France)
TC 70 Internal combustion engines (United Kingdom)

TC 71 Concrete, reinforced concrete and pre-stressed concrete (USA)
TC 72 Textile machinery and machinery for dry-cleaning and industrial laundering (Switzerland)
TC 74 Cement and lime (Belgium)
TC 76 Transfusion, infusion and injection equipment for medical and pharmaceutical use (Germany)
TC 77 Products in fibre reinforced cement (Belgium)
TC 79 Light metals and their alloys (France)

TC 81 Common names for pesticides and other agrochemicals (United Kingdom)
TC 82 Mining - STAND BY (Germany)
TC 83 Sports and recreational equipment (Germany)
TC 84 Devices for administration of medicinal products and intravascular catheters (Denmark)
TC 85 Nuclear energy (France)
TC 86 Refrigeration and air-conditioning (USA)
TC 87 Cork (Portugal)
TC 89 Wood-based panels (Germany)

TC 91 Surface active agents (Iran)
TC 92 Fire safety (United Kingdom)
TC 93 Starch (including derivatives and by-products) (Jamaica)
TC 94 Personal safety -- Protective clothing and equipment (Australia)
TC 96 Cranes (United Kingdom)
TC 98 Bases for design of structures (Poland)
TC 100 Chains and chain sprockets for power transmission and conveyors (United Kingdom)

TC 101 Continuous mechanical handling equipment (Germany)
TC 102 Iron ore and direct reduced iron (Japan)
TC 104 Freight containers (USA)
TC 105 Steel wire ropes (United Kingdom)
TC 106 Dentistry (Canada)
TC 107 Metallic and other inorganic coatings (USA)
TC 108 Mechanical vibration and shock (USA)

TC 109 Oil and gas burners and associated equipment (United Kingdom)
TC 110 Industrial trucks (Germany)

TC 111 Round steel link chains, chain slings, components and accessories (United Kingdom)
TC 112 Vacuum technology (Germany)
TC 113 Hydrometry (United Kingdom)
TC 114 Horology (Switzerland)
TC 115 Pumps (France)
TC 116 Space heating appliances (vacant)
TC 117 Industrial fans (United Kingdom)
TC 118 Compressors and pneumatic tools, machines and equipment (Sweden)
TC 119 Powder metallurgy (Sweden)
TC 120 Leather (India)

TC 121 Anaesthetic and respiratory equipment (United Kingdom)
TC 122 Packaging (Turkey)
TC 123 Plain bearings (Russian Federation)
TC 126 Tobacco and tobacco products (Germany)
TC 127 Earth-moving machinery (USA)
TC 128 Glass plant, pipeline and fittings - STAND BY (Germany)
TC 129 Aluminium ores - STAND BY (France)
TC 130 Graphic technology (Germany)

TC 131 Fluid power systems (USA)
TC 132 Ferroalloys (China)
TC 133 Sizing systems and designations for clothes - STAND BY (South Africa)
TC 134 Fertilizers and soil conditioners - STAND BY (Iran)
TC 135 Non-destructive testing (Japan)
TC 136 Furniture (Sweden)
TC 137 Sizing system, designations and marking for boots and shoes - STAND BY (South Africa)
TC 138 Plastics pipes, fittings and valves for the transport of fluids (Japan)

TC 142 Cleaning equipment for air and other gases - STAND BY (France)
TC 144 Air distribution and air diffusion - STAND BY (United Kingdom)
TC 145 Graphical symbols (United Kingdom)
TC 146 Air quality (Germany)
TC 147 Water quality (Germany)
TC 148 Sewing machines (Germany)
TC 149 Cycles Spain)
TC 150 Implants for surgery (Germany)

TC 152 Gypsum, gypsum plasters and gypsum products - STAND BY (France)
TC 153 Valves (vacant)
TC 154 Processes, data elements and documents in commerce, industry and administration (Switzerland)
TC 155 Nickel and nickel alloys (Canada)
TC 156 Corrosion of metals and alloys (Russian Federation)
TC 157 Mechanical contraceptives (Malaysia)
TC 158 Analysis of gases (Netherlands)
TC 159 Ergonomics (Germany)
TC 160 Glass in building (United Kingdom)

TC 161 Control and protective devices for gas and oil burners and gas and oil burning appliances (Germany)
TC 162 Doors and windows (Japan)
TC 163 Thermal performance and energy use in the built environment (Sweden)
TC 164 Mechanical testing of metals (Japan)
TC 165 Timber structures (Canada)
TC 166 Ceramic ware, glassware and glass ceramic ware in contact with food (USA)
TC 167 Steel and aluminium structures (Norway)
TC 168 Prosthetics and orthotics (Germany)
TC 170 Surgical instruments (Germany)

TC 171 Document management applications (USA)
TC 172 Optics and photonics (Germany)
TC 173 Assistive products for persons with disability (Sweden)
TC 174 Jewellery (Germany)
TC 175 Fluorspar - STAND BY (vacant)
TC 176 Quality management and quality assurance (Canada)
TC 177 Caravans (United Kingdom)
TC 178 Lifts, escalators and moving walks (France)
TC 179 Masonry - STAND BY (Germany)
TC 180 Solar energy (Australia)

TC 181 Safety of toys (Denmark)
TC 182 Geotechnics (Netherlands)
TC 183 Copper, lead, zinc and nickel ores and concentrates (Australia)
TC 184 Industrial automation systems and integration (France)
TC 185 Safety devices for protection against excessive pressure (USA)
TC 186 Cutlery and table and decorative metal hollow-ware (United Kingdom)
TC 188 Small craft (Sweden)
TC 189 Ceramic tile (USA)
TC 190 Soil quality (Netherlands)

TC 191 Animal (mammal) traps - STAND BY (Canada)
TC 192 Gas turbines (USA)
TC 193 Natural gas (Netherlands)
TC 194 Biological evaluation of medical devices (Germany)
TC 195 Building construction machinery and equipment (Poland)
TC 196 Natural stone - STAND BY (Spain)
TC 197 Hydrogen technologies (Canada)
TC 198 Sterilization of health care products (USA)
TC 199 Safety of machinery (Germany)

TC 201 Surface chemical analysis (Japan)
TC 202 Microbeam analysis (China)
TC 203 Technical energy systems (Sweden)
TC 204 Intelligent transport systems (USA)
TC 205 Building environment design (USA)
TC 206 Fine ceramics (Japan)
TC 207 Environmental management (Canada)
TC 208 Thermal turbines for industrial application (steam turbines, gas expansion turbines) - STAND BY (Germany)
TC 209 Cleanrooms and associated controlled environments (USA)

TC 210 Quality management and corresponding general aspects for medical devices (USA)

TC 211 Geographic information/Geomatics (Norway)
TC 212 Clinical laboratory testing and in vitro diagnostic test systems (USA)
TC 213 Dimensional and geometrical product specifications and verification (Denmark)
TC 214 Elevating work platforms (USA)
TC 215 Health informatics (USA)
TC 216 Footwear (Spain)
TC 217 Cosmetics (Iran)
TC 218 Timber (Ukraine)
TC 219 Floor coverings (United Kingdom)
TC 220 Cryogenic vessels (France)

TC 221 Geosynthetics (United Kingdom)
TC 222 Personal financial planning (USA)
TC 223 Civil defence (Russian Federation)
TC 224 Service activities relating to drinking water supply systems and wastewater systems - Quality criteria of the service and performance indicators (France)
TC 225 Market, opinion and social research (Spain)
TC 226 Materials for the production of primary aluminium (Norway)
TC 227 Springs (Japan)
TC 228 Tourism and related services (Spain)

Annex F
Comparison of CEN and ISO bodies for selected technical areas

CEN body	Technical area	ISO body
CEN/TC 10	Lifts and escalators	ISO/TC 178
CEN/TC 15	Inland navigation vessels	(ISO/TC 8, TC 188)
CEN/TC 53	Scaffolds and working platforms	within ISO/TC 195
CEN/TC 79	Respiratory protective devices	ISO/TC 94/SC 15
CEN/TC 85	Eye protective devices	ISO/TC 94/SC 6
CEN/TC 98	Lifting platforms	ISO/TC 214
CEN/TC 114	Safety of machinery	ISO/TC 199
CEN/TC 121	Welding	ISO/TC 44
CEN/TC 122	Ergonomics	ISO/TC 159
CEN/TC 137	Dangerous substances in the workplace	partly within ISO/TC 146/SC2
CEN/TC 142	Woodworking machinery	ISO/TC 39/SC 4
CEN/TC 143	Machine tools	ISO/TC 39/SC 2 and SC 10
CEN/TC 144	Machinery for agriculture	ISO/TC 23
CEN/TC 147	Cranes	ISO/TC 96
CEN/TC 148, TC 188	Continuous handling equipment	ISO/TC 101
CEN/TC 150	Industrial trucks	ISO/TC 110
CEN/TC 151	Construction equipment and building material machines	ISO/TC 127, TC 195
CEN/TC 153	Food processing machinery	within ISO/TC 199
CEN/TC 158	Head protection	ISO/TC 94/SC 1
CEN/TC 160	Protection against falls from height	ISO/TC 94/SC 4
CEN/TC 161	Foot and leg protectors	ISO/TC 94/SC 3
CEN/TC 162	Protective clothing	ISO/TC 94/SC 13
CEN/TC 168	Chains and ropes	ISO/TC 105, TC 111
CEN/TC 169	Light and lighting	CIE
CEN/TC 181	Liquefied petroleum gas appliances	ISO/TC 116, TC 161
CEN/TC 182	Refrigerating systems	ISO/TC 86/SC 1
CEN/TC 196	Machines for underground mines	ISO/TC 82, TC 118/SC 3
CEN/TC 197	Pumps	ISO/TC 115
CEN/TC 198	Paper machinery	ISO/TC 130
CEN/TC 207	Office furniture	ISO/TC 136
CEN/TC 211	Noise of machinery	ISO/TC 43/SC 1
CEN/TC 214	Textile machinery	ISO/TC 72
CEN/TC 231	Vibration	ISO/TC 108/SC 4
CEN/TC 232, TC 255	Pneumatic technology	ISO/TC 118
CEN/TC 248	Textiles	ISO/TC 38
CEN/TC 274	Aircraft ground support equipment	ISO/TC 20/SC 9
CEN/TC 310	Industrial automation	ISO/TC 184

Annex G
Participation of European countries (CEN members) in ISO bodies relevant for OHS

To save space, the countries considered here are designated with their 2-letter-country codes in accordance with ISO 3166-1. The meaning of the codes is:

AT	Austria	FR	France	MT	Malta
BE	Belgium	GB	United Kingdom	NL	Netherlands
CH	Switzerland	GR	Greece	NO	Norway
CY	Cyprus	HU	Hungary	PL	Poland
CZ	Czech Republic	IE	Ireland	PT	Portugal
DE	Germany	IS	Iceland	SE	Sweden
DK	Denmark	IT	Italy	SI	Slovenia
EE	Estonia	LU	Luxembourg	SK	Slovakia
ES	Spain	LV	Latvia		
FI	Finland	LT	Lithuania		

No. TCxx/SCy	**European countries (CEN members only); S = Secretariat, P, O = P- or O-member)**																											
	AT	BE	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HU	IE	IS	IT	LU	LV	LT	MT	NL	NO	PL	PT	SE	SI	SK
JTC1/SC35	P				P	P	P			P	**S**		P	O	O		O					O		O		P		
TC 5/SC 11	P		**S**			P			O		P	P					P					P	O					
TC 20/SC 9	O				O	P					**S**	P		O			O					O		O		O		
TC 21	O	P	P		P	P	O	O	P	P	P	P	O	O	O	O	P					O	O	P	P	P	O	O
TC22/SC13		P	O			P	O		O	O	P	P		O	O		P					O		O		P		O
TC 23/SC 2	P	P	O			P		O	P	P	P	P		O	O		P					P		O	O	P		O
TC 23/SC 3	P	O	P		O	**S**		O	P	P	P	P		O	O		P					P		O	O	P		O
TC 23/SC 6		P	O		O	P	P	O	P	P	**S**	P		O	O		P					P		O	O	P	O	O
TC23/SC13		P	O		O	P			P	O	P	P		O			P					P		O		P		O
TC23/SC15	P	O	P		O	O			O	**S**	P	P		O			P					P		O		P		O

No. TCxx/SCy	European countries (CEN members only); S = Secretariat, P, O = P- or O-member)																										
	AT	BE	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HU	IE	IS	IT	LU	LV	LT	MT	NL	NO	PL	PT	SE	SI	SK
TC23/SC17	O	P			O	P			P	P	P	P		O			P					P		O		**S**		O
TC 29	P	O	P		O	P	O		P	O	**S**	P	O	O	O		P						O	P	O	P		O
TC 29/SC 5	P	O	P		P	**S**			O		P	P		O			P						P	P	P	P		O
TC 39	O	O	**S**		P	P	O		P	O	P	P	O	O			P							P	P	P		O
TC 39/SC 4			O		P	**S**	O		O		P	P					O							P		P		
TC 39/SC 6			P		P	**S**	P		O		P	P					P							P	P	P		O
TC39/SC10			**S**		P	P	O			P	P	P													P	P		
TC 43	P	P	P		P	P	**S**		P	P	P	P	O	P	O	O	P					P	P	O	O	P	O	O
TC 43/SC 1	P	P	P		P	P	**S**		P	P	P	P	O	P	O	O	P					P	P	O	O	P		O
TC 44	P	P	P	O	P	P	P		O	P	**S**	P	O	P	O		P					O	O	O	P	P		P
TC 44/SC 5	P	P	P		P	P	O		O	P	P	P		O	O		P					O	O	O	P	P		P
TC 44/SC 6	P	P	O		P	**S**			O	O	P	P		O	O		P						O	O	O	P		P
TC 44/SC 8	P	P	P		P	**S**			O	O	P	P		P	O		P						O	O	O	P		P
TC 44/SC 9			P		P	P	P		O	O	P	**S**		P			P					P	O	O		P		P
TC 45/SC 1	P	P			P	P			O	O	O	P	O	P			P					P	O	O		P		O
TC 58/SC 4	P	P	P		O	P			P	P	P	P		O	P		P					O		O	P	P		
TC 72/SC 5	O		P			P	P		P		**S**	P					P							O		P		
TC 72/SC 8	O		P			**S**			P		P	P					P							P				
TC 82	O	O			O	**S**			P	O	O	P	O		O		O							O	O	P		
TC 85/SC 2	P	P	O		P	P			P	P	**S**	P		P	O		P					O		P		P		O
TC 86/SC 1	O	P	P		O	P	P		O		P	P		O		O	P					P		P	O			O
TC 94	P	P	P		P	P	P		P	P	P	P	O	O	O		P	O				P	O	P	O	P		O
TC 94/SC 1	P	P	P		O	P	P		O	O	P	P	O	O	O		P					P		P	O	P		O

No. TCxx/SCy	European countries (CEN members only); S = Secretariat, P, O = P- or O-member)																										
	AT	BE	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HU	IE	IS	IT	LU	LV	LT	MT	NL	NO	PL	PT	SE	SI	SK
TC 94/SC 3	P	P	O		O	P	O		P	P	P	**S**		O	O		P					P		P	O	P		O
TC 94/SC 4	O	O	O		O	P	O		O	O	O	P	O	O	O		P					P		P	O	P		O
TC 94/SC 6	P	P	P		O	P	P		P	P	P	**S**	O	O	P		P					O		P	O	P		O
TC94/SC12	P	P	P		O	P	P		P	P	O	P		O			P					O		P		P		O
TC94/SC13	P	P	**S**		O	P	P		P	P	P	P	O	O	P		P	O				P	O	P	O	P		O
TC94/SC14	P	P	P			P	P		P	P	P	P			P		P	P				P				P		O
TC94/SC15		P	P			**S**	P		P	P	P	P			P		P					P		P		P		O
TC 96	O	P			O	P	O		O	P	P	**S**	O	O	O		P					P	O	P	P	P		O
TC 96/SC 5	O	P			O	P			O	P	P	P					P					P	P	P	O	P		O
TC 96/SC 6	O	P			O	P			O	O	P	P					P					P	O	P		P		
TC 96/SC 7	O				O	P			O	O	**S**	P					P					P	O	P	O	P		
TC 101	P	O			O	**S**			P	P	P	P	O	O	O		P					O		P		O		O
TC 105	P	O	P		O	P	O		O	O	P	**S**	O	O	O		P					P		O	P	P		
TC108/SC3		O	P		P	P	**S**		O	O	P	P		O	O		P						O		O	P		P
TC108/SC4	P	O	P		P	**S**	P		O	O	P	P		P	O		P					P	P	P		P		O
TC 110	P	O			P	**S**	O		O	O	P	P	O	O	O		P					O		O		P		O
TC110/SC2					P	P	O		O	O	P	**S**		O	P		P					P		O		P		O
TC 111	P	O			O	P	O		O	O	P	**S**		O	O		P					P		O		P		
TC 116	O	P	O		P	P	O		O	O	P	O	O	O	P		P					P	P	O				O
TC118/SC3	O	P	O		P	P	P		O	O	P	P			O		P					O		O		**S**		
TC127/SC2		O			O	P			O	P	P	P					P					P		P		P		O
TC127/SC3		O			O	P			O	O	P	P					P					O		P		P		O
TC 130	O	P	P		O	**S**	O	O	P	O	O	P		O	O		O					P		O	O	O		
TC 131	O	O	P		P	P	O		O	P	P	P	O	O	O		P					O	O	P	O	P		O
TC 136	P	P	O		O	P	P	O	P	P	P	P	O	O	P		P			O		P	P	P	O	**S**		O

No. TCxx/SCy	European countries (CEN members only); S = Secretariat, P, O = P- or O-member)																										
	AT	BE	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HU	IE	IS	IT	LU	LV	LT	MT	NL	NO	PL	PT	SE	SI	SK
TC 145	P	O	O		P	P	O		O	O	P	**S**	O	O	O		O					P	P	O	P		O	O
TC145/SC2	P	P	O		O	**S**			O	O	P	P			P		P					P	P	O				O
TC145/SC3	P					O			O			P					O					P	P	O				
TC 146	P	P	O		P	**S**	O		P	O	P	P	O	O	O	O	P				O	P	O	P	P	P	O	O
TC146/SC2		P	O			O	O		P	O	O	P		O		O	P					P	O	P		P		O
TC146/SC3	O	P	O		O	P	O		P	O	P	P		O	O	O	P					P	O	P		P		O
TC 148	O		P		O	**S**			O	O	P	P	O		O		P						O	P	O			
TC 158	O	P	O		P	P	O		P	O	O	P		O	O		P					**S**	O	P	P	P		O
TC 159	P	P	O		P	**S**	P		P	P	P	P	O	O	O		P			O		P	P	P		P		P
TC159/SC1	P	P			P	**S**	P		O	O	P	P		O			P					P	O	P		P		P
TC159/SC3	O	P			P	P	P		O	P	P	P		O			P					P		P		P		P
TC159/SC4	P	P			P	P	P		P	P	P	**S**		O	P		P					P	P	P		P		P
TC159/SC5	O	P			P	P	P		O	P	P	**S**					P					P		P		P		P
TC 163	P	P	P		O	P	P		O	P	P	P	O	O	O	O	O					P	P	O	O	**S**	O	O
TC 178	P	P	P		P	P	O		P	P	**S**	P		O	O	O	P					P	P	O	O	P		O
TC 184	O	P	P		P	P	O		P	O	**S**	P	O	P	O	O	P			O		P	P	O	O	P		O
TC184/SC2		P	P		P	P	O		P	O	P	P		P			P					O	O	O	P	**S**		O
TC 188	P	P	P		P	P	O		O	P	P	P	O	O	O	O	P					P	P	O	P	**S**		O
TC 195	O	O			O	P	O		O	P	P	P		O			P					O		**S**		P		O
TC 199	P	O	P		P	**S**	P	O	P	P	P	P		O		O	P				O	P	P	P	P	P	O	P
TC 214	O	O			O	P	O		O	P	P	P		O	O		P					P		O		P		O

Annex H
List of addresses

a) International standards organizations

ISO International Organization for Standardization
1, rue de Varembé
CH-1211 Geneve 20
Switzerland
Tel. + 41 22 749 01 11
Fax + 41 22 733 34 30
Internet : http://www.iso.org

IEC International Electrotechnical Commission
3, rue de Varembé
CH-1211 Geneve 20
Switzerland
Tel. + 41 22 919 02 11
Fax + 41 22 919 03 00
Internet: http://www.iec.ch

ITU International Telecommunication Union
and other international organizations
see Annex I

b) List of ISO and CEN members mentioned within this study

(in the alphabetic sequence of abbreviations of the standards bodies)

Abbreviation, name	**Town, country, Internet address**	**Remarks**
AENOR Asociación Espanola de Normalización y Certificación	Madrid, Spain http://www.aenor.es	CEN member, see Annex G
AFNOR Association Francaise de Normalisation	Saint-Denis La Plaine Cedex, France http://www.afnor.org	CEN member, see Annex G
ANSI American National Standards Institute	Washington, DC & New York, USA http://www.ansi.org	Secr. JTC1, TC 20, TC 108, TC 127, TC 131, TC 214, TC 22/SC 13, TC 23/SC 2, TC 23/SC 13, TC 44/SC 5, TC 58/SC 4, TC 86/SC 1, TC 94/SC 1, TC 96/SC 6, TC 127/SC 2, TC 145/SC 3, TC 146/SC 2, TC 146/SC 3, see Annex D
BSI British Standards Institution	London, United Kingdom http://www.bsi-global.com	CEN member, see Annex G
CNI Czech Standards Institute	Prague, Czech Republic http://www.cni.cz	CEN member, see Annex G
CYS Cyprus Organisation for Standardization	Nicosia, Cyprus http://cys.org.cy	CEN member, see Annex G
DIN Deutsches Institut für Normung e.V.	Berlin, Germany http://www2.din.de	CEN member, see Annex G

DS Dansk Standard	Charlottenlund, Denmark http://www.ds.dk	CEN member, see Annex G
DSM Department of Standards Malaysia	Putrajaya, Malaysia http://www.dsm.gov.my	Secr. TC 45/SC 1, see Annex D
ELOT Hellenic Organization for Standardization	Athens, Greece http://www.elot.gr	CEN member, see Annex G
EVS Estonian Centre for Standardization	Tallinn, Estonia http://www.evs.ee	CEN member, see Annex G
IBN Institut Belge de Normalisation	Bruxelles, Belgium http://www.ibn.be	CEN member, see Annex G
IPQ Instituto Português de Qualidade	Caparica, Portugal http://www.ipq.pt	CEN member, see Annex G
IST Icelandic Standards	Reykjavik, Iceland http://www.stadlar.is	CEN member, see Annex G
JISC Japanese Industrial Standards Committee	Tokyo, Japan http://www.jisc.go.jp	Secr. TC 96/SC 5, TC 127/SC 3, TC 159/SC 3, see Annex D
KATS Korean Agency for Technology and Standards	Gyunggi-do, Rep. Korea http://www.ats.go.kr	Secr. TC 21, see Annex D
LST Lithuanian Standards Board	Vilnius, Lithuania http://www.lsd.lt	CEN member, see Annex G
LVS Latvian Standards Ltd	Riga, Latvia http://www.lvs.lv	CEN member, see Annex G

MSA Malta Standards Authority	Valletta, Malta http://www.msa.org.mt	CEN member, see Annex G
MSZT Hungarian Standards Institution	Budapest, Hungary http://www.mszt.hu	CEN member, see Annex G
NEN Nederlands Normalisatie-Instituut	Delft, Netherlands http://www.nen.nl	CEN member, see Annex G
NSAI National Standards Authority of Ireland	Dublin, Ireland http://www.nsai.ie	CEN member, see Annex G
ON Österreichisches Normungsinstitut	Vienna, Austria http://www.on-norm.at	CEN member, see Annex G
PKN Polish Committee for Standardization	Warsaw, Poland http://www.pkn.pl	CEN member, see Annex G
SA Standards Australia	Sydney, Australia http://www.standards.org.au	Secr. TC 94, TC 94/SC 4, SC 12 and 14, see Annex D
SCC Standards Council of Canada	Ottawa, Ontario, Canada http://www.scc.ca	Some WGs, see Annex D
SEE Service de l'Energie de l'Etat Organisme Luxembourgeois de Normalisation	Luxembourg, Luxembourg http://www.see.lu	CEN member, see Annex G
SFS Suomen Standardisoimisliitto	Helsinki, Finland http://www.sfs.fi	CEN member, see Annex G

SIS Swedish Standards Institute	Stockholm, Sweden http://www.sis.se	CEN member, see Annex G
SIST Slovenian Institute for Standardization	Ljubljana, Slovenia http://www.sist.si	CEN member, see Annex G
SN Standard Norge	Lysaker, Norway http://www.standard.no	CEN member, see Annex G
SNV Schweizerische Normen-Vereinigung	Winterthur, Switzerland http://www.snv.ch	CEN member, see Annex G
SUTN Slovak Standards Institute	Bratislava, Slovakia http://www.sutn.gov.sk	CEN member, see Annex G
UNI Ente Nazionale Italiano di Unificatione	Milan, Italy http://www.uni.com	CEN member, see Annex G

Annex I
Participation of international organizations

Annex I contains information about a selection of international organizations which are in liaison with the TCs and SCs mentioned in Annex D, and which may be evaluated as being (possibly) relevant for the OHS sector.

Names and addresses of these organizations are given in the wording used by ISO on its website, i.e. in English or (sometimes) in French. The postal address is given in all cases; in addition to this, the Website address is also given if the information has been available. (Source in all cases: ISO-Website, May 2005).

Organization **Name and title**	**Address** **Website** (if available)	**TCs and/or SCs** (mentioned in Annex D), **where a liaison exists**
ASAM Association for Standardization of Automation and Measuring Systems (ASAM e.V.)	Arnikastrasse 2 **85 635 Hoehenkirchen** **Germany**	TC 184
AUDI International Society of Audiology	Dr. Molewaterplein 40 **3015 GD Rotterdam** **Netherlands**	TC 43
BIAP International Office for Audiophonology	Cornelia Passage 8 **79312 Emmendingen** **Germany**	TC 43, TC 43/SC 1
CECE Committee for European Construction Equipment	Diamant Building Boulevard A. Reyers, 80 **1030 Bruxelles** **Belgium**	TC 127/SC 2, TC 195
CECIMO European Committee for Cooperation of the Machine Tool Industries	66, avenue Louise (1st floor) **1050 Bruxelles** **Belgium**	TC 39, TC 39/SC 6, TC 39/SC 10, TC 184
CELIMAC European Liaison Committee for the Sewing Machine Industry	Bekleidungs- und Ledertechnik Richard-Strauss-Str. 56/III **82677 München** **Germany**	TC 148

CEMA European Committee of Associations of Manufacturers of Agricultural Machinery	19, rue Jacques Bingen **75017 Paris** **France**	TC 23/SC 2, TC 23/SC 3, TC 23/SC 15, TC 108/SC 4
CI Consumers International	Head Office 24 Highbury Crescent **London N5 1RX** **United Kingdom**	TC 199
CIB International Council for Building Research, Studies and Documentation	P.O. Box 1837 **3000 BV Rotterdam** **Netherlands** http://www.cibworld.nl/	TC 159, TC 159/SC 5, TC 163, TC 178
CIE International Commission on Illumination	Central Bureau Kegelgasse 27 **1030 Wien** **Austria** http://www.cie.co.at/	TC 94, TC 159/SC 4, TC 159/SC 5
CIGR International Commission of Agricultural Engineering	Institut für Landtechnik Universität Bonn Nussalle 5 **53115 Bonn** **Germany**	TC 23/SC 6
CIRP International Institution for Production Engineering Research	9, rue Mayran **75009 Paris** **France**	TC 29, TC 39, TC 184
CONCAWE The Oil Companies' European Organization for Environmental and Health Protection	Boulevard du Souverain, 165 1160 Bruxelles Belgium http://www.concawe.be	TC 43/SC 1
CTIF International Technical Committee for the Prevention and Extinction of Fire	44, av. de la Division Leclerc **92318 Sèvres Cedex** **France**	TC 21

EC European Commission	200, rue de la Loi **1049 Bruxelles** **Belgium**	TC 21, TC 22/SC 13, TC 23/SC 2, 3 and 15, TC 29, TC 39, TC 43, TC 43/SC 1, TC 44, TC 85/SC 2, TC 94, TC 94/SC 1 and 3, TC 96, TC 101, TC 158, TC 159, TC 159/SC 5, TC 163, TC 178, TC 184
ECCS European Convention of Constructional Steelwork	32/36, avenue des Ombrages, Bte 20 **1200 Bruxelles** **Belgium**	TC 44
ECMA International	114, rue du Rhone **1204 Genève** **Switzerland** http://www.ecma-international.org	TC 43/SC 1, TC 159, TC 159/SC 4
EGMF European Garden Machinery Manufacturers Federation	c/o ORGALIME Diamant Building 80, Boulevard Reyers 1030 Bruxelles Belgium http://www.orgalime.org	TC 23/SC 13
ELMO European Laundry and Dry Cleaning Machinery Manufacturers	UCMTF (Syndicat des machines textiles) c/o Mme Cholet Cedex 72 92038 Paris la Défense France	TC 72/SC 5
EPPMP European Power Press Manufacturers Panel	c/o AMTRI Hulley Road **Macclesfield SK10 2NE** **United Kingdom**	TC 39/SC 6
ETSA European Textile Services Association	24, rue Montoyer, Box 7 1000 Bruxelles Belgium http://www.etsa-europe.org	TC 94, TC 94/SC 14
ETSI European Telecommunications Standards Institute	650, route de Lucioles **06921 Sophia Antipolis Cedex** **France** http://portal.etsi.org	TC 43/SC 1

EUMABOIS European Committee of Woodworking Machinery Manufacturers	Centro Direzionale Milanofriori La Strada, Pal. F3 **20090 Assago Mi** **Italy**	TC 39/SC 6
EURATEX European Apparel and Textile Association	24, rue Montoyer **1000 Bruxelles** **Belgium**	TC 94, TC 148
EUROFEU European Committee of the Manufacturers of Fire Protection Equipment and Fire Fighting Vehicles	Postfach 71 08 64 **60498 Frankfurt am Main** **Germany**	TC 21
EUROVENT/CECOMAF European Committee of Air Handling and Refrigeration Equipment Manufacturers	Boulevard A. Reyers, 80 **1030 Bruxelles** **Belgium**	TC 116
EWA European Welding Association	c/o BEAMA Westminster Tower 3 Albert Embankment **London SW1 7SL** **United Kingdom**	TC 44
FEM European Federation of Handling Industries	c/o ORGALIME Diamant Building 80 Boulevard A. Reyers **1030 Bruxelles** **Belgium**	TC 96, TC 101, TC 110/SC 2,
GAS-EUROSOUD European Committee of Manufacturers of Gas-Welding Equipment	Postfach 71 08 64 **60528 Frankfurt am Main** **Germany**	TC 44
GERG European Gas Research Group	Avenue Palmerston 4 **1000 Bruxelles** **Belgium**	TC 158
I-Ince International Institute of Noise Control Engineering	P.O. Box 3067 Arlington Branch **Poughkeepsie, NY 12603** **USA**	TC 43/SC 1

IAEA International Atomic Energy Agency	P.O. Box 100 Wagramer Strasse 5 **1400 Wien** **Austria** http://www.iaea.org/	TC 85/SC 2, TC 146
IATA International Air Transport Association	800 Place Victoria P.O. Box 113 **Montreal, PQ H4Z 1M1** **Canada** http://www.iata.org/	TC 43, TC 43/SC 1
ICAO International Civil Aviation Organization	999 University Street **Montreal, PQ H3C 5H7** **Canada** http://www.icao.org/	TC 43, TC 43/SC 1, TC 146
ICBEN International Commission on Biological Effects of Noise	Department of Psychology University of Sydney **Sydney, NSW 2006** **Australia**	TC 43, TC 43/SC 1, TC 159/SC 5
ICRP International Commission on Radiological Protection	**17116 Stockholm** **Sweden** http://www.icrp.org	TC 85/SC 2
ICRU International Commission on Radiation Units and Measurements	7910 Woodmont Avenue Suite 400 **Bethesda, MD 20814-3095** **USA** http://www.icru.org/	TC 85/SC 2
ICSID International Council of Societies of Industrial Design	c/o Montreal International 455, St-Antoine West Suite SS10 **Montreal, Quebec H2Z 1J1** **Canada** http://www.icsid.org	TC 159, TC 159/SC 3, TC 159/SC 4
IDRC International Dry-cleaning Research Committee	Stichting TKT Postbus 10 **4060 GA Ophemert** **Netherlands**	TC 72/SC 5
IEA-ergonomics International Ergonomics Association	Intergo Postbus 19218 **3501 DE Utrecht** **Netherlands**	TC 159, TC 159/SC 1, TC 154/SC 3, TC 159/SC 4, TC 159/SC 5

IIR International Institute of Refrigeration	177, boulevard Malesherbes **75017 Paris** **France** http://www.iifiir.org	TC 86/SC 1
IIW International Institute of Welding	Z1 Paris Nord 2 B.P. 50362 **95942 Roissy CDG Cedex** **France** http://www.iiw-iis.org	TC 44, TC 44/SC 9
ILO International Labour Organization	4, route de Morillons **1211 Genève 22** **Switzerland** http://www.ilo.org/	TC 21, TC 23/SC 3 and 17, TC 43, TC 43/SC 1, TC 44, TC 44/SC 9, TC 85/SC 2, TC 94, TC 94/SC 3 and 4, TC 96, TC 101, TC 108/SC 4, TC 110/SC 2, TC 127/SC 2, TC 159, TC 159/SC 1, 3 and 5
ILS International Life Saving Federation	Gemeenteplein 26 **3010 Leuven** **Belgium**	TC 145/SC 2
IMO International Maritime Organization	4, Albert Embankment **London SE1 7SR** **United Kingdom** http://www.imo.org/	TC 21, TC 94, TC 108/SC 4
ISTCL International Scientific and Technical Committe on Laundering	Stichting TKT Postbus 10 **4060 GA Ophemert** **Netherlands**	TC 72/SC 5
ITU International Telecommunication Union	Place des Nations **1211 Genève** **Switzerland** http://www.itu.int/	TC 159/SC 4
IUF International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations	8, rampe du Pont-Rouge **1213 Petit-Lancy** **Switzerland**	TC 43/SC 1, TC 94, TC 159

IUPAP International Union of Pure and Applied Physics	DAPHNIA/DIR CEA – Saclay **91191 Gif-sur Yvette** **France**	TC 43, TC 43/SC 1, TC 108
OECD Organisation for Economic Co-operation and Development	2, rue André Pascal **75016 Paris** **France**	TC 23/SC 2, 3 and 15, TC 43
OIML International Organization of Legal Metrology	11, rue Turgot **75009 Paris** **France** http://www.oiml.int/	TC 43, TC 43/SC 1, TC 85/SC 2, TC 108/SC 3, TC 131, TC 158
OIPEEC International Organization for the study of the Endurance of Wire Ropes	Wire Ropes Technology Grünenthaler Strasse 40a **52072 Aachen** **Germany**	TC 96
OPEI The Outdoor Power Equipment Institute	341 South Patrick Street **Old Town Alexandria,** **VA 22314** **USA**	TC 23/SC 13
PNEUROP European Committee of Manufacturers of Compressors, Vacuum Pumps and Pneumatic Tools	Diamant Building 80 Bd Reyers **1030 Bruxelles** **Belgium** http://www.pneurop.com	TC 108/SC 4, TC 118/SC 3
RI Rehabilitation International	25 East 21st Street **New York, NY 10010** **USA**	TC 159, TC 159/SC 1, 3 and 5, TC 178
RILEM International Union of Laboratories and Experts in Construction Materials, Systems and Structures	157 rue des Blains **92220 Bagneux** **France** http://www.rilem.org/	TC 163
UIC International Union of Railways	16, rue Jean-Rey **75015 Paris** **France** http://www.uic.asso.fr/	TC 43/SC 1, TC 44, TC 108/SC 4

UN/ECE United Nations Economic Commission for Europe	Palais des Nations **1211 Genève 10** **Switzerland** http://www.unece.org/	TC 21, TC 22/SC 13, TC 23/SC 2 and 3, TC 43, TC 43/SC 1, TC 94/SC 1, TC 96, TC 163, TC 184
WCO World Customs Organization	Rue du Marché 30 **1210 Bruxelles** **Belgium** http://www.wcoomd.org	TC 21, TC 29, TC 39, TC 44, TC 94, TC 96, TC 101, TC 131, TC 148, TC 163
WHO World Health Organization	Avenue Appia 1211 Genève 27 Switzerland http://www.who.int/	TC 22/SC 13, TC 23/SC 3, TC 43, TC 43/SC 1, TC 85/SC 2, TC 94, TC 94/SC 1 and 3, TC 108/SC 4, TC 159, TC 159/SC 1 and 3

Annex J
Glossary: Concepts and abbreviations used in this study

Annex J provides a list of concepts and abbreviations for ISO bodies, documents and procedures. The following notes apply to the terminology used in this study.

ISO uses three official languages (English, French, and Russian). The dominant working language is, de facto, English. Russian falls within the exclusive responsibility of the Russian ISO member. French is used in a limited manner; the official French versions of DIS and ISO Standards usually being developed by the French standards body AFNOR. German is not in use within ISO.

From this it follows that the German national committees participating in ISO work also use many English expressions (less with respect to the contents of the standards, but mostly for the procedures). Some names and concepts fail to have well-known German terms. Furthermore, the „ISO language" uses a large number of abbreviations. Often a „CD" is better known than a „Committee Draft" (or even the corresponding German term).

This study, too, in its original German version uses many (mostly additional) English expressions where appropriate. They are printed (in the original German version) in *italics*.

Names and abbreviations for national standards bodies of individual countries are given in Annex H; for names and abbreviations of international organizations involved in ISO standardization see Annex I.

Adoption of ISO Standards: Transposition of ISO standards into national or regional standards, see 1.4.4, Table 6, 1.6, 2.5.8

Appeal: Arbitration procedure of ISO for handling infringements of rules, see 1.3.4.4, Table 5, 2.5.7

Approval stage: Formal voting of ISO members on the FDIS, see 1.2.8, Table 1, 2.5.6

CASCO: ISO Committee on Conformity Assessment, see 1.1

CD: Committee draft at TC level, see 1.2.6, Table 1, Table 2, 1.3.2.7, Table 3, 2.5.3

CEN: Comité Européen de Normalisation (European Committee for Standardization), see 1.4, 2.4, 2.5.9

CEN lead: CEN leadership for projects intended for parallel voting, see 1.4.5, Table 8

CENELEC: Comité Européen de Normalisation Electrotechnique (European Committee for Electrotechnical Standardization), see 1.4.1

Central Secretariat: ISO office in Geneva, see 1.1, 2.6.7

Committee draft: Document for discussion at TC level, see 1.2.6, Table 1, Table 2, 1.3.2.7, Table 3, 2.5.3

Committee stage: Consensus building on a committee draft at TC level, see 1.2.6, Table 1, 2.5.3

COPOLCO: ISO Committee on Consumer Policy, see 1.1

Council: Political steering body of ISO, see 1.1, 2.6.6

CS: ISO Central Secretariat, see 1.1, 2.6.7

DEVCO: ISO Committee on Developing Countries Matters, see 1.1

Directives: Formal rules for the technical work of ISO, see 1.2.1, 1.3.3, Annex A

DIS: ISO Draft International Standard, enquiry Draft, see 1.2.7, Table 1, Table 2, 2.5.5

Draft International Standard: DIS, enquiry draft, document for comments and voting at ISO member level, see 1.2.7, Table 1, Table 2, 2.5.5

Drafting of International Standards: Rules in Part 2 of the ISO Directives, see 1.5, Table 9

EN: European Standard, see 1.4

Enquiry stage: Submission of a draft International Standard (DIS) to ISO members for comments and vote, see 1.2.7, Table 1, 2.5.5

FDIS: Final Draft International Standard, see 1.2.8, Table 1, Table 2, 2.5.6

Final Draft International Standard: FDIS, document for formal approval at ISO member level, see 1.2.8, Table 1, Table 2, 2.5.6

General Assembly: Political body composed of ISO members, corresponding members, subscriber members, and principal officers, see 1.1

Guide: International document with advisory content, see 1.3.2.5, 1.3.3, Table 4

IDT: identical, in relation to the adoption of International Standards, see 1.6, Table 10

IEC: International Electrotechnical Commission, see 0, 1.4.1

International Standard: Main product of international standardization work (ISO and IEC), see 1.2.9, Table 1, Table 2, 1.3.2.1, Table 4

ISO: International Organization for Standardization, see 0, 1.1

ISO lead: ISO leadership for projects intended for parallel voting, see 1.4.5, Table 7

ISO Member Body: National standards body with full voting and participation rights within ISO, see 1.1, 1.3.4.3, Table 4, 2.2

ITU: International Telecommunication Union, see 0

IWA: ISO International Workshop Agreement, see 1.3.2.4, Table 2

JWG: Joint Working Group of two or more TCs or SCs

MOD: Modified, in relation to the adoption of International Standards, see 1.6, Table 10

NEQ: Not equivalent, in relation to the adoption of International Standards, see 1.6, Table 10

New work item proposal: NP, document for discussion at TC level on a new standards project, see 1.2.4, Table 1, 2.5.1

NP: New work item proposal, see Table 1

O-Member: Observer member in an ISO/TC or SC, see 1.2.1

Parallel voting: Simultaneous approval procedure on the same document within ISO and CEN, see 1.4.5

PAS : ISO Publicly Available Specification, see 1.3.2.3 , Table 2, Table 3

P-Member: Participating - as opposed to an observer – member within an ISO/TC or SC, see 1.2.1

PQ, UQ: Questionnaire procedure for the adoption of International Standards within CEN, see 1.4.4, Table 6

prEN: Draft European Standard, see Table 7, Table 8

Preliminary work item: PWI, standards project at the preliminary stage, see 1.2.3, Table 1

Preliminary stage: Retention of preliminary work items for later decision, see 1.2.3, Table 1

Preparatory stage: Development of working drafts, see 1.2.5, Table 1

Proposal stage: Discussion of new work item proposals, see 1.2.4, Table 1, 2.5.1

Publication stage: Publication and distribution of the finalized working result, see 1.2.9, Table 1

PWI: Preliminary work item, see Table 1

REMCO: ISO committee on Reference Materials, see 1.1

SC: Subcommittee, see 1.1, 1.2.1

TC: Technical Committee, see 1.1, 1.2.1, 1.3.4.2, Table 3, 2.5.2, 2.5.3

TC chairman: Chosen head of a TC, conducts the meetings and represents the TC to the outside, see 2.6.1

TC delegation: National representatives of an ISO member at a TC meeting, see 2.6.3

TC secretariat: Secretariat of a TC, usually under the responsibility of an ISO member, see 2.6.2

Technical Committee: Technical body composed of national delegations, see 1.1, 1.2.1, 1.3.4.2, Table 3, 2.5.2, 2.5.3

Technical Report: Document for information purposes, see 1.3.2.6, Table 2, Table 3

Technical Specification: Technical document for provisional use, see 1.3.2.2, Table 2, Table 3

TMB: Technical Management Board, see 1.1, 2.6.6

TR: Technical Report, see 1.3.2.6, Table 2, Table 3

TS: Technical Specification, see 1.3.2.2, Table 2, Table 3

UAP: Abbreviated approval procedure within CEN, see 1.4.4, Table 6

Vienna Agreement: Formal agreement between ISO and CEN on mutual cooperation, see 1.3.3, 1.4, 2.4, 2.5.9

WD: Working draft at WG level, see 1.2.5, Table 1, 1.3.2.8

WG: Working group, see 1.1, 1.2.1, 1.3.4.1, 2.5.4

WG convenor: Head of a working group, see 2.6.4

WG experts: Participants in a working group, see 2.6.5

Working draft: Document for discussion at WG level, see 1.2.5, Table 1, 1.3.2.8

Working group: Body composed of experts nominated in a personal capacity, see 1.1, 1.2.1, 1.3.4.1, 2.5.4

Workshop Agreement: Result of an ISO Workshop, see 1.3.2.4, Table 2