STRATEGIC BUSINESS PLAN
ISO/TC 145

EXECUTIVE SUMMARY

Graphical symbols appear in all areas of human endeavour. Whether in the workplace or in the home; in public buildings and private sites; when travelling for business or pleasure, and on virtually any piece of equipment and product labels you see graphical symbols.

With an increasingly mobile world population and ever-greater opportunities for international trade and tourism, graphical symbols are an essential tool for organizations, manufacturers and suppliers to convey messages to users independently of language and in a concise way. In the field of safety signs (and greater mobility of labour), ease of recognition is vital to help save people from injury and death from identified hazards. The committee looks to work with other interested committees (in ISO, IEC, CEN, etc.) as well as international liaison bodies.

For this to be a success, the graphical symbols need to be consistent and well designed to aid recognition and ensure that there is no confusion. The groups of standards already established by ISO/TC 145 for graphical symbols for use on equipment, safety signs and public information symbols have been a major factor in establishing world-wide understanding of messages and a major help to the manufacturing and packaging industries as well as sign makers and suppliers as well as the wider public as end users. Equally important is the opportunity to avoid duplication and potential confusion. The significance of ISO/TC 145 is shown by:

- Annex SH from ISO/TC 145 is part of the ISO/IEC Directives;
- ISO/TC 145 is classified as an ISO horizontal committee;
- Many of ISO/TC 145's standards are listed as ISO basic reference works

The basic principles for the design of symbols (including those developed in association with IEC) are of assistance to all standards committees that require graphical symbols in their documents. The standards that detail the graphical symbols maintained by ISO/TC 145 in its role as a horizontal committee are essential to the long-term success of standardization in this field.

The main objective of the committee is the continuing maintenance and development of the existing standards that contain the established graphical symbols and safety signs. Further symbols are continuously being considered for inclusion and there is no indication that this will diminish.

Standards have also been developed for design principles and for the use of the registered symbols in such areas as safety way guidance, classification, guidance for the use of beach safety signs and flags, escape and evacuation plans, location plans and location and direction signs as well as testing. Further standards are being considered for pipe and tank markings, guidance for the use of safety signs and index signs with more expected.

In collaboration with IEC, the committee established a joint graphical symbols database that is intended to enable all graphical symbols on equipment to be easily accessed by potential users and be the tool for future development of symbols. The committee has played a leading role in the development of the ISO Online Browsing Platform (OBP) in particular for graphical symbols where all registered symbols are included and readily available for viewing and purchase by potential users. This is continuously being updated.

The committee is reviewing its title and scope to perhaps better reflect its wide range of standards and their content

1 INTRODUCTION

1.1 ISO technical committees and business planning

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

1.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: **ISO** (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of **IEC** (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of **ITU** (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 164 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the **International Standard**.

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its **Technical Committees** are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

2 BUSINESS ENVIRONMENT OF ISO/TC 145

2.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of ISO/TC 145, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

ISO/TC 145 is an horizontal committee providing a service to other Technical Committees, but it also has a specific role in the development of standards for graphical symbols and safety signs.

The importance of good design to help comprehension by the end user is increasingly being recognized by those creating and using graphical symbols.

There is increasing government interest in many areas, in particular, safety signs and product safety labels, with legislation coming through covering workplace safety and public liability issues. There are well-established design principles for safety signs for the identification of hazard, prohibition, etc. which are essential for the protection of employees and the general public.

The influence of consumer groups is increasing in that governments and industry are looking for good quality, easily recognizable graphical symbols, which convey the intended message to the target audience.

There is an increasing imperative to respond to accessibility issues and recognition that well-designed graphical symbols can be a vital aid to those with cognitive or vision problems as well as the more obvious physical challenges.

With global harmonization of manufacturing, all industries have a requirement for non-written communication on their products. Equally, the tourism and travel industries require standardized symbols to aid the consumer in this ever-increasing market. The World Tourism Organization has particularly drawn attention to the needs of developing countries in this area.

There is a need for consistent application of graphical symbols in public buildings such as hospitals, leisure facilities, transport hubs, community centres, hotels, etc. to convey information to the public.

The Committee also works closely with the sign manufacturing industry to develop standards for sign materials and performance.

Thus, the stakeholders include industry, government, public interest groups, employees, customers, suppliers, contractors, consumers and local communities, in fact all concerned with the projection of messages that are independent of language.

A lack of standardization in the field of graphical symbols would be a clear barrier to international trade and understanding, and could potentially lead to personal danger.

The work of the Committee also helps in savings in design and development time as well as leading to potential reductions in manufacturing costs.

2.2 Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC:

The trend throughout the world is for a greater use of graphical symbols in all areas of human activity. With greater worldwide communication, the globalization of manufacturing and the increase in tourism, governments, consumer bodies and international organizations require standardization to ensure recognition and avoid confusion.

Graphical symbols in the ISO/TC 145 standards appear in, for example: sign catalogues produced by sign manufactures; signs, brochures and guides issued by the tourism and travel industries as well as national and local government bodies; instructions in the use of equipment and on machinery, vehicles, etc.; product safety labels and packaging; consumer protection information.

The extremely wide use of graphical symbols means that most industries are affected in some way, so that it is impossible to estimate the total value of the market relating to graphical symbols.

This is particularly true of graphical symbols used on equipment, where symbols are used by a wide variety of industries, e.g. automotive industry, aerospace industry, domestic appliance manufacturers.

The sign manufacturing industry itself is mostly made up of smaller companies working in relatively limited areas but there are a number of major firms that serve global markets. There is a similar make up in the field of label manufacturing whilst some companies have in-house arrangements. All, however, benefit from access to internationally recognized graphical symbols and safety signs.

There is visual evidence of investment in new signage projects including graphical symbols throughout the world plus the now common use of graphical symbols rather than language on controls and equipment indicating an increasing use of the standardized symbols. This helps the economies of scale in manufacturing and purchasing as well as reducing development and design costs.

In all the fields covered by ISO/TC 145, national standards bodies and global organizations have been adopting the published standards or incorporating the relevant graphical symbols and safety signs into documents and guidelines.

The principles for safety signs and the published specific designs are used in legislation in many countries. Consumer groups at international and national level call up the standards and there is an increasing use by international organizations in the tourism and travel sectors.

Graphical symbols appear in a very large number of standards developed by ISO Technical Committees and other standardization bodies.

3 BENEFITS EXPECTED FROM THE WORK OF ISO/TC 145

- ISO/TC 145 is an horizontal committee and provides International Standards for the whole field of graphical symbols within its scope. The approval and registration processes through ISO/TC 145 subcommittees provide a service to all other ISO/TCs and other interested parties.
- These processes standardize graphical symbol based communication, from design principles, uniformity of conception through to comprehension criteria.
- The coordination aspect of ISO/TC 145 work leads to one symbol having only a single meaning, and a single meaning being represented by only one symbol.
- The savings associated with a technically rationalized product at lower costs are enormous for manufacturers worldwide.
- International consensus on graphical symbols facilitates the clear description of complex functions, which is practically impossible through written communication. More and more information has to be presented on smaller and smaller available space.
- Greater efficiency and use of resources is achievable by a standardization process that provides a graphical symbol for communication with an identified international need. Order and structure in future development of graphical symbols is also given in basic design principles, together with a process of continual improvement in user comprehension for such communication.
- Legislators are provided with the tools to effectively apply standardized principles to health and safety information (legislation).
- An additional benefit is reduction of risk in safety related fields. The use of graphical symbols to convey safety related information has been shown to be a major benefit for the end user in terms of the workplace, public buildings and all other areas, including leisure activities.
- Consumers benefit from the standardization process by being provided with clear instructions and having better recognition of facilities.

4 REPRESENTATION AND PARTICIPATION IN ISO/TC 145

4.1 Membership

The following link shows O and P members of TC/145.

Countries/ISO member bodies that are P and O members of the ISO/TC 145

4.2 Analysis of the participation

Six major continents are represented on ISO/TC 145 or its sub-committees: Africa, Asia; Australasia; Europe; and North and South America. These represent the major manufacturing areas and markets.

The committee has representatives from the developed world where generally the expertise in design resides. Developing countries find it more difficult to provide experts to participate and to travel to meetings although they have a great need for the end results of the committee's work.

The P-membership is growing but needs enlargement, and efforts need to be made to involve those countries not yet participating, particularly those in Africa, for example, through the increase in electronic working.

The experts on the committee come from a wide sphere of influence including manufacturers of equipment, sign makers, designers, purchasers, academic bodies and consumer groups.

ISO/TC 145 has liaison with several international bodies but their greater participation in the work is always welcome.

5 OBJECTIVES OF ISO/TC 145 AND STRATEGIES FOR THEIR ACHIEVEMENT

5.1 Defined objectives of ISO/TC 145

- To continue to implement effective procedures for the approval of graphical symbols, to provide an effective response to other TCs and interested bodies.
- To significantly increase the rate of standardization of graphical symbols, with ongoing regular standardization achieved.
- To continue the on-going review and improvement of standards.
- To continue to develop effective standards for design principles for graphical symbols.
- To give guidance for the use of graphical symbols and safety signs including in the wider field of signage, plans and diagrams
- To further contribute to the development of the Online Browsing Platform (OBP).
- To continue the development of the user-friendly joint ISO/IEC graphical symbols database.
- To work towards a greater alignment of terminology in the graphical symbols field.
- To improve the Committee's Livelink website.
- To ensure that all potential users are aware of the standards developed by the committee and benefit from them.

5.2 Identified strategies to achieve the ISO/TC's defined objectives

- Continued review and alignment of procedures for standardization.
- Ongoing development and publication of standards that detail all graphical symbols for use on equipment, for public information, and safety signs.
- Further develop new standards, technical reports and codes of practice to aid in the process of effective use graphical symbols and safety signs.
- Ongoing review of published standards.
- Ongoing development of standards on design principles.
- Continued cooperation with IEC/SC 3C.
- Continued review of the use and improvement of the OBP.
- To review the title and scope to improve the understanding of the committee's work.
- Improve communication about the standards including the use of new media opportunities.

6 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF ISO/TC 145 WORK PROGRAMME

Appropriate comprehension testing in the areas of public information graphical symbols and safety signs may prove time consuming and a barrier to standardization without commensurate reward and recognition for providers of the financial resources necessary.

The development of European Directives without reference to the Committee is a potential barrier to global standardization as is the work of certain UN bodies. The committee has been very active in lobbying for changes to avoid confusion and duplication. Support of ISO Central Secretariat as well as participating countries is essential to ensure the primacy of ISO standards and thus avoid future confusion and potential hazards to people through the lack of harmonization.

There is also the challenge of getting both more nations and younger experts involved.

7 STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF ISO/TC 145

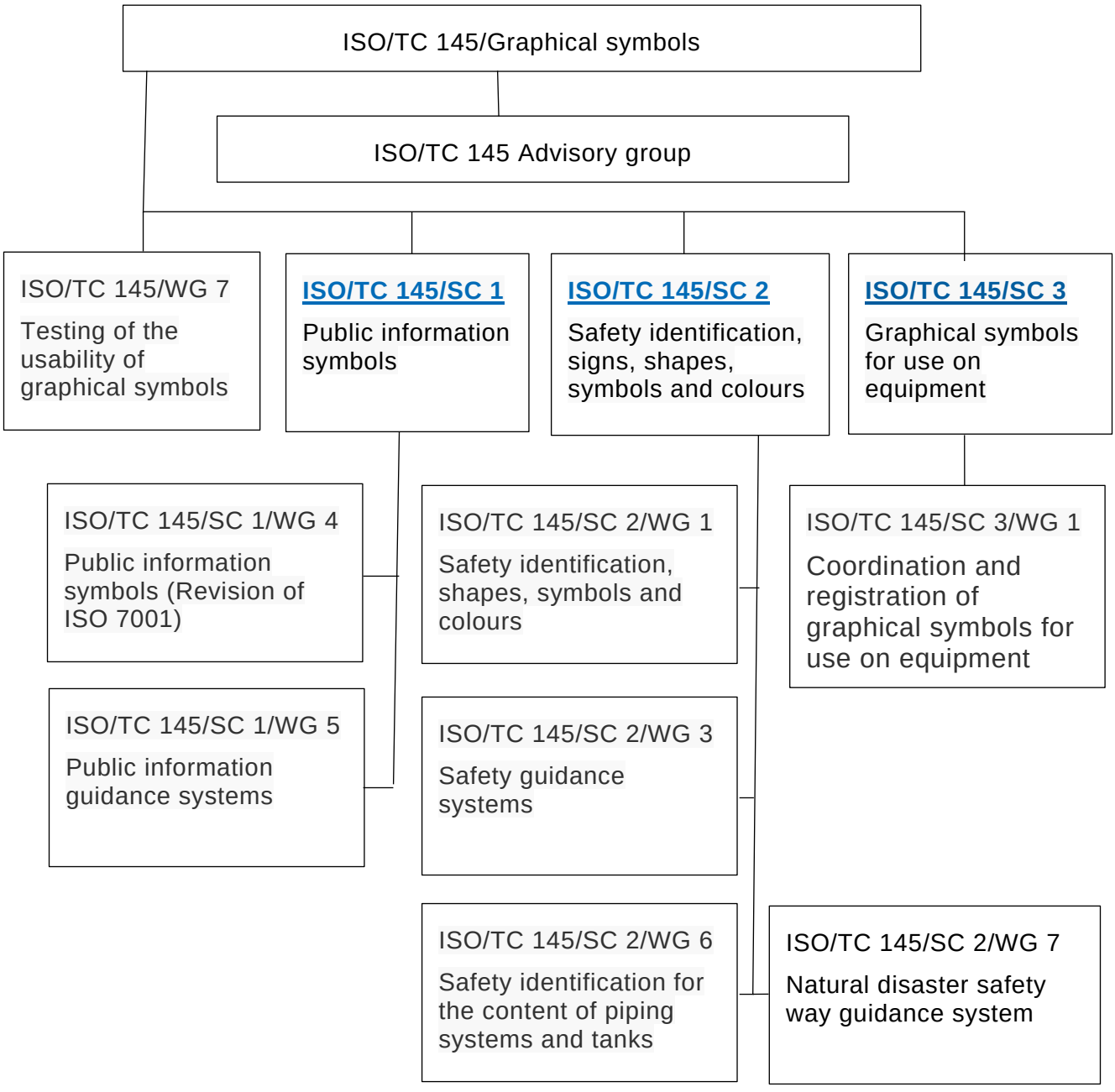
7.1 Structure

This section gives an overview of ISO/TC 145's structure. It gives information on existing and planned standardization projects and publications of ISO/TC 145 and its subcommittees.

The subcommittee structure, as shown in the overview, reflects three principle fields of application. There are important interfaces with IEC/SC 3C and with ISO/COPOLCO.

Working Groups are responsible for drafting standards, Subcommittees for the work programme and time-scales, the Technical Committee for management and overall responsibility for the work programme and co-ordination of progress, whilst the Advisory Group provides technical collaboration and liaison both within and outside ISO.

In its role as a horizontal committee, ISO/TC 145 supports the work of other Technical Committees. Technical and functional resources are provided by industry, trade and professional associations and academic bodies.



7.2 Current projects and publications

Standard no	Title	Committee
ISO 3864-1	Graphical symbols -- Safety colours and safety signs -- Part 1: Design principles for safety signs and safety markings	SC 2
ISO 3864-2	Graphical symbols -- Safety colours and safety signs -- Part 2: Design principles for product safety labels	SC 2
ISO 3864-3	Graphical symbols -- Safety colours and safety signs -- Part 3: Design principles for graphical symbols for use in safety signs	SC 2
ISO 3864-4	Graphical symbols -- Safety colours and safety signs -- Part 4: Colorimetric and photometric properties of safety sign materials	SC 2
ISO 7000	Graphical symbols for use on equipment -- Registered symbols	SC 3
ISO 7001	Graphical symbols -- Public information symbols	SC 1
ISO 7010	Graphical symbols -- Safety colours and safety signs -- Registered safety signs	SC 2
ISO 9186-1	Graphical symbols -- Test methods -- Part 1: Method for testing comprehensibility	TC 145
ISO 9186-2	Graphical symbols -- Test methods -- Part 2: Method for testing perceptual quality	TC 145
ISO 9186-3	Graphical symbols -- Test methods -- Part 3: Method for testing symbol referent association	TC 145
ISO 16069	Graphical symbols -- Safety signs -- Safety way guidance systems (SWGS)	SC 2
ISO 17398	Safety colours and safety signs -- Classification, performance and durability of safety signs	SC 2
ISO 17724	Graphical symbols – Vocabulary TO BE WITHDRAWN (superceeded by OBP)	TC 145
ISO 20712-1	Water safety signs and beach safety flags -- Part 1: Specifications for water safety signs used in workplaces and public areas	SC 2
ISO 20712-2	Water safety signs and beach safety flags -- Part 2: Specifications for beach safety flags -- Colour, shape, meaning and performance	SC 2
ISO 20712-3	Water safety signs and beach safety flags -- Part 3: Guidance for use	SC 2
ISO 22727	Graphical symbols -- Creation and design of public information symbols -- Requirements	SC 1
ISO 23601	Safety identification -- Escape and evacuation plan signs	SC 2
ISO 28564-1	Public information guidance systems -- Part 1: Design principles and element requirements for location plans, maps and diagrams	SC 1
ISO 28564-2	Public information guidance systems -- Part 2: Design principles and requirements for location signs and direction signs	SC 1
IEC 80416-1	Basic principles for graphical symbols for use on equipment -- Part 1: Creation of graphical symbols for registration	SC 3
ISO 80416-2	Basic principles for graphical symbols for use on equipment -- Part 2: Form and use of arrows	SC 3

Standard no	Title	Committee
IEC 80416-3	Basic principles for graphical symbols for use on equipment -- Part 3: Guidelines for the application of graphical symbols	SC 3
ISO 80416-4	Basic principles for graphical symbols for use on equipment -- Part 4: Guidelines for the adaptation of graphical symbols for use on screens and displays (icons)	SC 3
ISO 28564-3	Public information guidance systems -- Part 3: Guidelines for the design and use of information index signs	SC 1
PWI 20560-1	Safety information for the content of piping systems and tanks – Part 1: Piping systems	SC 2
ISO/TR 20559	Guidance for the development and use of a safety signing system	SC 2
ISO 22578	Graphical Symbols -- Safety colours and safety signs -- Natural disaster safety way evacuation guidance system	SC 2

8 INFORMATION ON ISO ONLINE

The link below is to the TC's page on ISO's website:

ISO TC 145 on ISO Online

Click on the tabs and links on this page to find the following information:

- About (Secretariat, Secretary, Chair, Date of creation, Scope, etc.)
- Contact details
- Structure (Subcommittees and working groups)
- Liaisons
- Meetings
- Tools
- Work programme (published standards and standards under development)

Reference information

Glossary of terms and abbreviations used in ISO/TC Business Plans

General information on the principles of ISO's technical work