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## ISO Ergonomics Standards Update

*By James R. Williams, Chair, U.S. TAGs to ISO TC159/SC1 and SC4*

The purpose of this article is to describe the work of two of the subcommittees of the International Organization for Standardization (ISO) Technical Committee on Ergonomics (TC159) and the activities of the associated U.S. Technical Advisory Groups (TAGs). As TAG administrator for ISO/TC159, the Human Factors and Ergonomics Society is charged with providing the American National Standards Institute (ANSI) with the U.S. vote and comments for the standards being developed by TC159 and its subcommittees. These votes and comments are prepared by the HFES-administered committee/subcommittee TAGs. This article covers ISO TC159/SC1 (Ergonomic Guiding Principles) and ISO TC159/SC4 (Ergonomics of Human-System Interaction) and concludes with a call for participation.

### U.S. TAGs to ISO/TC159/SC1 and SC4

It is important that the U.S. position on standards proposals be based on input from both individuals and organizations representing various U.S. interests in the area being standardized. ANSI requires that TAGs provide the opportunity for all affected parties to be represented. Also, TAGs are responsible for recommending U.S. experts to ANSI for membership in working groups and arranging and coordinating subcommittee and working group meetings that take place in the United States.

Currently, both the SC1 and SC4 TAG have one physical meeting each year in conjunction with the HFES Annual Meeting and a teleconferencing meeting. The distribution of all documents, as well as voting and commenting on standards, is done by e-mail.

### ISO TC159/SC1

SC1 is charged with producing general standards that apply across various ergonomics subject areas. The U.S. TAG to TC159/SC1 was formed only last year because of concerns about potential overlaps between some of the standards being produced by SC1 and other standards (particularly standards developed by SC4). In fact, many of the members of the SC1 TAG are also members of the SC4 TAG.

TC159/SC4 has the following working groups:

- **WG1** – Principles of the Design of Work Systems (Revision of ISO 6385)

- **WG2** – Ergonomic Principles Related to Mental Work (ISO 10075)
- **WG4** – Usability of Everyday Products (ISO 20282)

The SC1 TAG recently reviewed the FDIS 10075-3 (Ergonomic Principles Related to Mental Workload, Part 3: “Methods for Measuring and Assessing”). Two other standards are being processed in SC1 and are being reviewed by the TAG: ISO/DIS 20282-1 (Ease of Operation of Everyday Products, Part 1: “Context of Use and User Characteristics”) and ISO/CD 20282-2 (Part 2: “Test Methods”).

### ISO TC159/SC4

The subcommittee for standards concerning the ergonomics of human-system interaction (SC4) was formed in 1984 with the initial charter to develop standards in the area of ergonomics requirements for office work with visual display terminals. However, SC4’s charter was expanded to include all areas of human-system interaction.

The standards being produced by SC4 are particularly important because the European economic community’s standards organization (CEN) is adopting these standards as CEN standards. This process, based on the Geneva Agreement, requires that CEN members vote concurrently with ISO members on draft international standards developed by TC159. Because many European countries require that products conform to standards before they can be used in the workplace, it is likely that U.S. products will need to meet CEN standards to successfully compete in the European market. Therefore, it is very important that the U.S. TAG carefully review all these ergonomics standards to ensure that they are based on firm technical grounds and that they will not put U.S. firms at a disadvantage.

The multipart ISO 9241 standard (Ergonomic Requirements for Office Work with Visual Display Devices - VDTs) was the primary standard series developed by SC4. Part 1 is the introduction to the standard; part 2 provides guidance on task requirements; Parts 3, 4, 7, 8, and 9 concern hardware; Parts 5 and 6 concern workstation layout and environment; and Parts 10 through 17 pertain to software.

A number of additional standards developed by SC4 were not part of the 9241 series: for example, ISO 13406 (Ergonomic

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Requirements for the Use of Flat Panels), ISO 13407 (Human-Centered Design Process for Interactive Systems), and ISO 14915 (Ergonomic Requirements for Multimedia). In addition, SC4 is responsible for the ISO 11064 series, Ergonomic Requirements for Control Centers.

Several additional SC4 standards were developed originally by CEN standards groups and then circulated to ISO and CEN members for dual voting. These standards include ISO 9355 (Ergonomic Requirements for the Design of Displays and Control Actuators) and the revision of ISO 1503 (Geometrical Orientation and Direction of Movements). However, the new revision to ISO 1503 is now being done within SC4/WG1.

TC159/SC4 has the following working groups:

- **WG1** – Fundamentals of Controls and Signaling Methods, (currently working on the revision to ISO 1503).
- **WG2** – Visual Display Requirements (developed ISO 9241, Parts 3, 7, and 8; ISO 13406, Parts 1 and 2, now working on revisions to be included in the 9241-300 series).
- **WG3** – Control, Workplace, and Environment Requirements (developed ISO 9241, Parts 4, 5, 6, and 9, now working on revisions for input device standards that will be in the 9241-400 series).
- **WG5** – Software Ergonomics and Human-Computer Dialogues (developed ISO 9241, Parts 10 through 17 and ISO 14915, Parts 1 through 3). WG5 is completing the revision of Part 10, “Dialogue Principles” (now ISO 9241-110) and is working on ISO 23973 (“WWW User Interfaces”) and ISO 9241-171 (“Software Accessibility”).
- **WG6** – Human-Centered Design Processes (developed ISO 13407 and a number of technical reports concerning human-centered design development and assessment). WG6 is working on ISO 9241-20 (Accessibility Guideline for Communication Equipment and Services).
- **WG8** – Ergonomic Requirements for Control Rooms (ISO 11064, Parts 1–7).

## How to Get Involved

Because the SC1 TAG is relatively new, there are only six members, and we welcome additional members. Before the economic downturn, the SC4 TAG had approximately 25 members representing computer manufacturing, telecommunications, government organizations, software development organizations, the insurance industry, universities, aerospace companies, biomedical companies, and furniture manufacturing. However, there are only about 12 members of the SC4 TAG, and we would like to increase this number to ensure full representation of U.S. interests in this important area of human-system interaction standards.

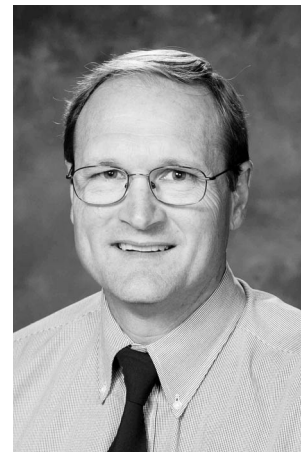
In addition, we do not have U.S. experts participating in any of the SC1 working groups and have limited participation in SC4’s working groups 1, 3, 5, and 8. The content of the standards being developed is based primarily on expert contributions within the working groups, so it is critical that the United States provide as many experts as possible.

To be nominated as an expert to a working group, a candidate must provide evidence of expertise in the subject area and indicate that funding is available to travel to working group meetings. Expert nominations are voted on by the TAG membership, and those approved are forwarded to ANSI for submittal to ISO.

Please direct any inquiries about the U.S. TAG to ISO/TC159/SC1 or SC4 to James R. Williams or Lynn Strother, c/o HFES, U.S. TAG Administrator to ISO/TC159, P.O. Box 1369, Santa Monica, CA 90406-1369. ☒

## ANNUAL MEETING

### Disney Safety Director to Present Keynote



Orlando’s theme parks are popular tourist destinations, but they can also offer valuable human factors/ergonomics lessons, according to this year’s annual meeting keynote speaker. Emmett Peter, Walt Disney Parks and Resorts’ director of global safety, will speak about his 20 years of experience working to make theme park attractions safe. Peter will present “Human Factors, Ergonomics, and Safety at Disney” at the Tuesday morning plenary session on September 27 at the Loews Royal Pacific Resort at Universal Orlando.

In his presentation, Peter will highlight the myriad interesting human factors issues that arise in the theme park business, in terms of both human performance and safety. Peter will cover a number of topics of general interest, including amusement ride g forces, biometrics, ergonomics of performers, and anthropometry. In the amusement business, these elements are closely linked to the safety of guests and cast and, ultimately, to the enjoyment of the Disney experience.



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