



**ISO/IEC JTC 1 "Information technology"**  
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## **SC 35 Business Plan**

| <b>Document type</b>        | <b>Related content</b> | <b>Document date</b> | <b>Expected action</b>                |
|-----------------------------|------------------------|----------------------|---------------------------------------|
| General document /<br>Other |                        | 2020-10-01           | <b>COMMENT/REPLY</b> by<br>2020-11-02 |

### **Description**

This document is circulated for review and consideration at the November 2020 JTC 1 virtual Plenary

## 1. Executive summary

The JTC1/SC 35 scope is to integrate the requirements for Accessibility, Cultural and Linguistic Adaptability and User Interfaces (CLAUI) aspects in products so that software and hardware be adapted to local cultural, linguistic, and user needs.

IT Accessibility matters to an important and growing population around the world. Situations such as persons with specific needs, ageing populations, people working in noisy environments, limited use of hands (e.g. while driving or typing), language barriers, etc. All these examples may result in specific, permanent, or temporary user needs that IT User interfaces should address

Equal access to IT devices, digital information and interactions is central not only to secure wider product adoptions, but also to facilitate employment, and support all users with means of socialization, business interactions or citizenship rights. JTC1/SC35 is, since 2014, acting also as the ISO/IEC JTC1 accessibility representative, with the mission to promote the adoption of accessibility concepts with ISO bodies and beyond. Given its mandate, SC35 is strongly contribute to the work of the "Strategic Advisory Group on Accessibility" set up by the TMB (TMB Resolution 99/2018) to review and map "existing and ongoing work on accessibility in ISO, IEC and ITU, developing recommendations on tools to assist the TC community in developing standards that take accessibility into consideration".

SC35 has also agreed to conduct (for harmonization) a comparison of EN 17161 "Design-for-All" and the ISO/IEC 30071-1 "Code of practice for creating accessible ICT products and services".

All these issues are clearly crucial and of paramount importance given the current epidemic that boost remote access to information, teleworking, and virtual meeting via ICT equipments. To this end, JTC1/SC35 contributes to the JTC 1 Advisory Group 17 SD19 to ensure that all meetings (face to face, virtual/online, and mixed ones) are accessible to all participants.

## 2. Chairman's Remarks

### 2.1 Market Requirements, Innovation

Information and communication technologies (ICT) are used in every conceivable area of life. There is an increasing need, for instance, to secure access to the Internet by all citizens all around the world and to bring everyone, independently from their culture and language, online. The current epidemic is strongly boosting this process. There is especially a need to develop market-relevant standards enabling the Cultural and linguistic concepts to be implemented in ICT products. Besides, the growth of the elderly population and the growing concern for disabled drive a stream of user's needs and accessibility requirements that can partially be addressed by JTC1/SC 35 standards in the context of its scope.

New projects with a focus on Natural User Interfaces and Interactions continue to be initiated by the JTC1/SC35 members. Projects such as the one regarding simultaneous interpretation, affective computing or easy to read and easy to understand are perfectly in line with this approach. In addition, projects related to interfaces using speech input/output including emotions, gestures, linguistic & cultural features are being debated while study groups are set-up to review and anticipate expectations of industry with respects to new topics such as immersive environments or IoT interfaces.

## 2.2 Resources

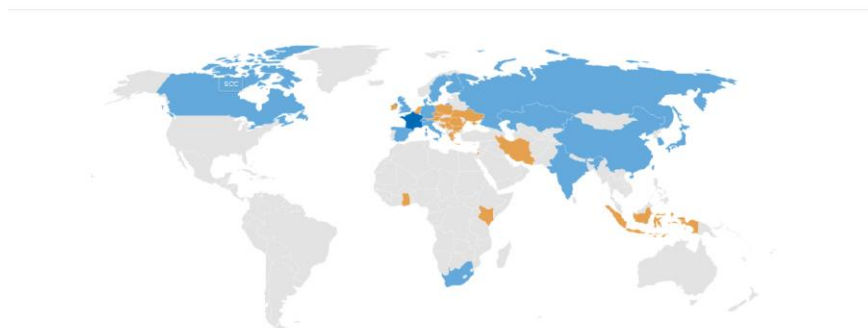
Before the outbreak of the Covid-19 epidemic, almost all projects were well staffed, and resources were adequate for the current tasks. Only a couple of projects are suffering some delays due to leaders' personal raisons that could not be anticipated. Switching all meeting from face-to-face ones to virtual/online ones may add some delays and jeopardize their achievement in time. This issue should be discussed at the JTC1 level.

As regularly reported to JTC1 meetings, JTC 1/SC 35 has participants with substantial expertise but to cover future necessary developments, it is important to attract new highly trained experts representing the market players and willing to actively contribute to the development of new projects. With only 17 P members and the absence of the USA, we need to better promote our activities and ensure that more countries get involved.

JTC1/SC35 continues to work in close collaboration with ITU-T which regularly issues Liaison statements for a joint benefit.

## 2.3 Competition and cooperation

The full JTC1/SC35 Membership list can be found at [SC Member Listing](#):



A list of liaisons can be found at [JTC 1/SC 35 Liaisons](#). JTC1/SC35 focuses on interfaces which are very common to many areas (devices, applications/services, Internet of Things, Smart objects/cities, etc.) and it takes considerable care to avoid overlaps and competition with other SCs as well as other organizations. Therefore, JTC1/SC 35 maintains many liaisons with other organizations and committees. As mentioned above, JTC1/SC35 has a very close and productive collaboration with ITU-T.

### 3. Discussion of SC program of work

A detailed program of work can be found at the SC 35 Committee Website. SC 35 participants continue to progress a wide range of projects, as shown below. At its last plenary meeting (Busan, Korea, Jan 2019), JTC1/SC35 resolved to create a new working group WG10, titled “Affective computing”, to develop standards in the field of affective computing user interfaces for various ICT systems.

#### 3.1 WG 1 Keyboards, methods and devices related to input and its feedback

WG1 is devoted to interfaces and interactions on keyboards and to other input devices and methods. WG1 continues to extend its activities towards virtual keyboards (e.g. on screen keyboard, projected keyboard, etc.). WG1 has completed a very important work on "a universal interface for choosing a natural language", proposing a new universal symbol that represents the universal natural language selector in IT applications (ISO/IEC 23836:2020). Work on on-screen keyboards with direct touch interface continue as planned with an important contribution on a general framework for virtual keyboards user interfaces (general requirements and recommendations for all forms of virtual keyboards including audio keyboards, on-screen or projected keyboards).

Revision of ISO/IEC 9995 keyboard standards series has also begun to cater for new national keyboard standard needs, alongside with the development of new parts to complement and ease multi-language keyboard use worldwide.

#### 3.2 WG 2 Graphical user interfaces for mobile devices

Discussions on ISO/IEC WD 22607 “Information technology - User interfaces - Icons for setting interaction mode” took place at the last plenary meeting in Busan (Feb 2019) and a new WD is under preparation. The JTC1/SC35 WG2 is considering animated emoji as a possible project and presentations are expected at the next meeting.

#### 3.3 WG 4 User interfaces for mobile devices

The important WG4 project is on the design and specification of a general framework for user interface guidelines on menu navigation (ISO/IEC 17549-1), with multiple parts and which is now at the DIS ballot level. The other parts of this project focus on navigation with multiple direction devices (1 and 4-directions). Some are under publication.

#### 3.4 WG 5 Cultural and linguistic adaptability

WG 5 develops standards to support cultural and linguistic adaptability and accessibility in user interfaces. Areas of interest include (but are not limited to): evaluation of cultural and linguistic adaptability of ICT products, user interface in natural languages, voice, gestures, and other modalities, harmonized human language equivalents, localization parameters, etc. Part of the WG5 studies on affective computing are now trusted to the newly established WG10.

The work regarding "Simultaneous translation" (ISO/IEC 23773, multi-parts) continues and it has been decided to modify the title as follows: “Information Technology - User interfaces for automatic simultaneous interpretation system” to enhance the “user interface” aspects. Working documents are being updated after the discussion at the plenary meeting.

The “Easy to read” project (ISO/IEC 23859-1) has been extensively discussed at the plenary meeting (Busan, Korea, Jan 2019) and the project leaders are preparing a revised WD for the next meeting. To clarify the content of this project, its names has been changed from “Guidance on making content Easy to Read and easy to Understand” to “Guidance on making written text easy to read and easy to understand”. At the same meeting, work on the use of speech technologies as user interfaces have

been reviewed and a Working draft will be discussed at the next meeting (Full duplex speech interaction user interfaces).

### 3.5 WG 6 User interface accessibility

A crucial mission of WG6 is to boost awareness on the now-published ISO/IEC 30071-1 "A code of practice for creating accessible ICT products and services" (ISO/IEC 30071-1:2019). We feel that this is an ISO Standard that should be taken into consideration in legislative works as well as in public procurements.

WG6 is making progress on the ISO/IEC 20071 (User interface component accessibility - Accessible user interface for accessibility settings on information devices) that is at the CD ballot. Several parts are undergoing updates and revisions, in cooperation with ITU-T Q26/16 groups.

A new project is initiated on visual presentation of audio information in sign languages to account for this in user interface component accessibility.

Work on updating ISO/IEC 29138-3 "**Guidance on user needs mapping**" has made important progress and the revised IS could be completed within 2020.

As indicated above, preliminary work is being conducted that may lead to additional parts of the 20071 series on:

- o Accessibility guidance for immersive environments
- o Accessibility guidance on software for playing media content
- o The use of sign languages in videos

### 3.6 WG 7 User interfaces object, actions, and attributes

This WG is now disbanded as all its activities have been completed.

### 3.7 WG 8 User interfaces for remote interactions

WG8 used to focus on concepts and frameworks for the support of user interactions from remote. All the projects within this WG have been completed and hence the WG is now dismantled.

### 3.8 WG 9 Natural user interfaces and interactions

WG9 initiated a major project to design and specify a "framework for evaluating usability of Natural User Interfaces" that would impact the development of all user interfaces.

WG9 also continues its work on the ISO/IEC 30113 series, dedicated to gesture-based interfaces across devices and methods. For instance, the ISO/IEC 30113-61 focuses on "Single-point gestures for screen readers". At the same time, a new project about haptic interfaces for wearable devices will be initiated by the group.

### 3.9 WG 10 Affective computing for user interfaces

WG10 is established to develop standards in the field of affective computing user interfaces for various ICT systems. Activities of WG10 will cover overviews of properties and characteristics of affects used in affective computing user interfaces (to achieve reliability, safety, security, privacy...) while considering methods and techniques to establish affect communication in ICT systems.

## 4. Visions for the future and Conclusions

Because of the Covid-19 epidemic, the meeting planned for July 2020 has been canceled and hence all the regular brainstorming meetings on visions and long term plans that the group conduct to tune its vision for the future have been postponed. Though most of the topics listed in the 2019 Business Plan remain valid at this stage.

JTC1/SC 35 WG1 team continues its work on new aspect of keyboards in particular virtual keyboards (on-screen/direct-touch, projected, etc.) considering requirements of many languages and cultures. A general framework is being designed to make specifications of such keyboard easier. We continue our work; through WG2, on new perspectives for interfaces and system outputs, strongly considering the accessibility issues, for example for icon representations (i.e. representing "something" by icons) and ensuring that such information can be turned into "ear"cons, "tact"cons and considering animated emojis. JTC1/SC 35 WG4 continues its work on interfaces for navigation on mobile and other devices, offering multiple directions. Cultural and Linguistic adaptation are essential requirements for accessibility and new projects such as "easy reading/easy understanding", simultaneous interpretation, speech input/output interfaces, are making substantial progress and bringing in new perspectives. The "User interface accessibility" group (WG6) continues to develop standards in three main areas (which might be added to in the future as additional opportunities are identified): User accessibility needs (in the ISO/IEC 29138 series), Development of user interface accessibility (in the ISO/IEC 30071 series) and User interface component accessibility (in the ISO/IEC 20071 series). New initiatives on immersive environments or IoT interfaces will be launched soon. WG6 has listed a set of projects for revision. JTC1/SC35 WG9 has initiated an important project on evaluating usability of Natural User Interfaces that will cover many interfaces and modalities.

As already indicated and considering the importance of the affective computing in the user interfaces for ICT services and products, SC35 has now a working group on "Affective Computing" that is working on a number of issues like an affect model to be used within our work.

Additionally, we continue to strength our liaisons with other relevant organizations, with joint activities conducted with ITU.

## 5. ISO/IEC JTC1/SC35 Standards under development

| <b>Standard and/or project under the direct responsibility of ISO/IEC JTC 1/SC 35 Secretariat</b>                                                                             | <b>Stage</b>          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| <a href="#">ISO/IEC 30112</a> : Information technology — Specification methods for cultural conventions                                                                       | <a href="#">60.00</a> |
| <a href="#">ISO/IEC FDIS 30113-60</a> Information technology — Gesture-based interfaces across devices and methods — Part 60: General guidance on gestures for screen readers | <a href="#">50.20</a> |
| <a href="#">ISO/IEC FDIS 30113-61</a> Information technology — Gesture-based interfaces across devices and methods — Part 61: Single-point gestures for screen readers        | <a href="#">50.20</a> |
| <a href="#">ISO/IEC DIS 30150-1</a> Information technology — Affective computing user interface (AUI) — Part 1: Model                                                         | <a href="#">40.99</a> |
| <a href="#">ISO/IEC DIS 17549-1</a> Information technology — User interface guidelines on menu navigation — Part 1: Framework                                                 | <a href="#">40.60</a> |
| <a href="#">ISO/IEC DIS 22121-2</a> Information technology — Virtual keyboards user interfaces — Part 2: On-screen keyboards with direct touch interface                      | <a href="#">40.60</a> |

| <b>Standard and/or project under the direct responsibility of ISO/IEC JTC 1/SC 35 Secretariat</b>                                                                                            | <b>Stage</b>          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| <a href="#">ISO/IEC CD 20071-5</a> Information technology — User interface component accessibility — Part 5: Accessible user interface for accessibility settings on information devices     | <a href="#">30.99</a> |
| <a href="#">ISO/IEC CD 17549-3</a> Information technology — User interface guidelines on menu navigation — Part 3: Navigation with 1-direction devices                                       | <a href="#">30.92</a> |
| <a href="#">ISO/IEC WD 24661</a> Information technology — User interfaces — Full duplex speech interaction user interfaces                                                                   | <a href="#">20.60</a> |
| <a href="#">ISO/IEC WD 23859-1</a> Information technology — Part 1: Guidance on making written text easy-to-read and easy-to-understand                                                      | <a href="#">20.20</a> |
| <a href="#">ISO/IEC WD 9995-3</a> Information technology — Keyboard layouts for text and office systems — Part 3: Complementary layouts of the alphanumeric zone of the alphanumeric section | <a href="#">20.00</a> |
| <a href="#">ISO/IEC WD 9995-7</a> Information technology — Keyboard layouts for text and office systems — Part 7: Symbols used to represent functions                                        | <a href="#">20.00</a> |
| <a href="#">ISO/IEC WD 9995-11</a> Information technology — Keyboard layouts for office systems — Part 11: Functionality of dead keys and repertoires of characters entered by dead keys     | <a href="#">20.00</a> |
| <a href="#">ISO/IEC WD 11581-7</a> Information technology — User interface icons — Part 7: Icons for setting interaction mode                                                                | <a href="#">20.00</a> |
| <a href="#">ISO/IEC WD 23773-1</a> User interface — Simultaneous interpretation system — Part 1: General                                                                                     | <a href="#">20.00</a> |
| <a href="#">ISO/IEC AWI 23773-2</a> User interface — Simultaneous Interpretation System — Part 2: Requirements and functional description                                                    | <a href="#">20.00</a> |
| <a href="#">ISO/IEC AWI 23773-3</a> User interface — Simultaneous interpretation system — Part 3: System architecture                                                                        | <a href="#">20.00</a> |