ISO/IEC JTC 1/SC 35
User Interfaces
Secretariat: AFNOR

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BUSINESS PLAN FOR JTC 1/SC 35 USER INTERFACES

Period covered:

October 2015 – September 2016

Submitted by:

Dr Khalid Choukri, ISO/IEC/JTC 1/SC 35 Chairman

1.0   MANAGEMENT SUMMARY

SC 35 Meetings

Past meetings

The SC35 Working Groups met two times during the period referenced by the previous Business Plan. These meetings took place in:

- Copenhagen, Denmark, 2015-01-19/23 (Working groups)
- Sapporo, Japan – 2015-08-31/09-04 (Working groups and Plenary)

Next meetings

- Rome, Italy, 2016-02-15/19 (Working groups)
- Korea – 2016-08-01/05 (Working groups and Plenary)

Organization within SC 35

JTC 1/SC 35 is subdivided in 7 permanent Working Groups

Working Groups :

- WG1 : **Keyboards and Input Interfaces** – Mr Alain LABONTÉ
- WG2 : **Graphical User Interface and Interaction** – Dr Yoshikazu YAMAMOTO
- WG4 : **User Interfaces for Mobile Devices** – Dr Yoshikazu YAMAMOTO
- WG5 : **Cultural and Linguistic Adaptability** – Mr Thibault GROUAS
- WG6 : **User Interface Accessibility** – Pr Jim CARTER
- WG7 : **User Interfaces Object, Actions and Attributes** – Pr Jim CARTER
- WG8 : **User Interfaces for Remote Interactions** – Pr Gottfried ZIMMERMANN

Note:

SC35 resolved to integrate **WG3 (Graphical Symbols)** with WG2 (User Interface Interaction), which was chaired by Dr. Yamamoto. This merger took effect in June 2004 and the title of the new WG2 became "Graphical User Interface and Interaction".

1. 1   CHAIRMAN'S REMARKS

Changes to members' list

There were no change in the SC 35 membership in the past year.

Members' list

JTC 1/SC 35 membership as of 2015-09-21 ([ISO Website's SC 35 page](#))

List of P and O Members

P Members (19)

- Canada (SCC)
- China (SAC)
- Denmark (DS)
- Finland (SFS)
- France (AFNOR)
- Germany (DIN)
- Greece (ELOT)
- India (BIS)
- Italy (UNI)
- Japan (JISC)

- Korea, Republic of (KATS)
- Russian Federation (GOST R)
- South Africa (SABS)
- Spain (AENOR)
- Sweden (SIS)
- Switzerland (SNV)
- Ukraine (DSSU)
- United Kingdom (BSI)
- USA (ANSI)

O Members (17)

- Austria (ASI)
- Belgium (NBN)
- Bosnia Herzegovina (BAS)
- Bulgaria (BDS)
- Czech Republic (UNMZ)
- Ghana (GSB)
- Hungary (MSZT)
- Indonesia (BSN)
- Iran (ISIRI)

- Ireland (NSAI)
- Israel (SII)
- Kenya (KEBS)
- Netherlands (NEN)
- New Zealand (SNZ)
- Poland (PKN)
- Romania (ASRO)
- Serbia (SSI)

1.2 JTC 1/SC 35 STATEMENT OF SCOPE

The current approved title and scope for ISO/IEC JTC 1/SC 35 is:

Title:
ISO/IEC JTC 1/ SC 35 – User interfaces

Scope:
Standardization in the field of user-system interfaces in information and communication technology (ICT) environments and support for these interfaces to serve all users, including people having accessibility or other specific needs, with a priority of meeting the JTC 1 requirements for cultural and linguistic adaptability.

This includes:

- user interface accessibility (requirements, needs, methods, techniques and enablers);

- cultural and linguistic adaptability and accessibility (such as evaluation of cultural and linguistic adaptability of ICT products, harmonized human language equivalents, localization parameters, voice messaging menus...);

- user interface objects, actions and attributes;

- methods and technologies for controlling and navigating within systems, devices and applications in visual, auditory, tactile and other sensorial modalities (such as by voice, vision, movement, gestures...);

- symbols, functionality and interactions of user interfaces (such as graphical, tactile and auditory icons, graphical symbols and other user interface elements);

- visual, auditory, tactile and other sensorial input and output devices and methods in ICT environments (for devices such as keyboards, displays, mice…);

- user interfaces for mobile devices, hand-held devices and remote interactions.

NOTE:

The current wording of the JTC 1/SC 35 Scope was proposed to and accepted by JTC 1 on its 2009 Plenary meeting in Tel Aviv. The new wording was **drafted in Plenary sessions and approved unanimously** (JTC 1/SC 35 Resolution 2009.62).

1.3   PROJECT REPORT

Overview of current standardization projects in the JTC1/SC35 work programme:

Active projects

(Highlighted text marks title changes and project subdivisions submitted to JTC 1 for review in a separate document)

Stage	Reference	Title	WG	Status	PUB target
PUB	9995-9	Information technology — Keyboard layouts for office systems — Part 9: – Multilingual-usage, multiscript keyboard group layouts	1	Submitted for PUB	2016
PUB TR	15440	Information technology – User interfaces – Future Keyboards, and other input devices and entry methods	1	Submitted for PUB	—
DIS	30113-11	Information technology -- Gesture-based interfaces across devices and methods -- Part 11: Single-point gestures for common system actions	1	To be submitted for DIS	—
WD	30113-51	Information technology -- Gesture-based interfaces across devices and methods -- Part 51: Single-point gestures for web browsing	1	WG work	—
WD	30113-5	Information technology – User interfaces -- Gesture-based interfaces across devices and methods – Part 5: Gesture Interface Markup Language (GIML)".	1	WG work	—
Minor rev	13251	13251 "Collection of graphical symbols for office equipment"	2	To be submitted for PUB	2015
PWI	17549-1	Information technology – User interface guidelines on menu navigation – Part 1: Framework and convergence matters	4	WG work	—
PUB TR	30109	Information Technology -- User Interfaces -- Worldwide availability of personalized computing environments / *Disponibilité mondiale des environnements informatiques personnalisés*	5	Submitted for PUB	2014

Stage	Reference	Title	WG	Status	PUB target
PUB	30122-1	Information Technology -- Voice commands – Part 1: Framework and general guidance	5	Submitted for PUB	2014
DIS	30122-2	Information Technology -- Voice commands – Part 2: Procedures for constructing and testing	5	Submitted for DIS	2017
DIS	30122-3	Information Technology -- Voice commands – Part 3: Translation and localization of voice commands	5	Submitted for DIS	2017
PUB	30122-4	Information Technology -- Voice commands – Part 4: Management of voice command registration	5	Submitted for PUB	2014
PUB TR	13066-2	Information Technology -- Assistive Technology Interoperability -- Part 2: Windows accessibility API	6	Submitted for PUB	2017
PUB TR	13066-4	Information Technology -- Assistive Technology Interoperability -- Part 4: Linux/UNIX graphical environments accessibility API	6	Submitted for PUB	2014
PUB TS	20071-21	Information Technology — User interface component accessibility — Part 21: Guidance on audio descriptions	6	Submitted for PUB	2016
WD	20071-25	Information Technology — Information technology — User interface component accessibility — part 25: Guidance on the auditory presentation of subtitles, captions, and other visual text	6	WG Work	—
CD	20232	Information technology -- User interfaces – Face-to-face speech translation	5	WG Work	—

Recently published standards (Since last Business plan)

Reference	Document title
ISO/IEC 9995-11	Information technology -- Keyboard layouts for office systems -- Part 11: Functionality of dead keys and repertoires of characters entered by dead keys
ISO/IEC 17549-2	Information technology -- User interface guidelines on menu navigation -- Part 2: Navigation with 4-direction devices
ISO/IEC 30113-1	Information technology -- User interface -- Gesture-based interfaces across devices and methods -- Part 1: Framework
ISO/IEC 24752-1	Information technology -- User interfaces -- Universal remote console -- Part 1: General framework
ISO/IEC 24752-2	Information technology -- User interfaces -- Universal remote console -- Part 2: User interface socket description
ISO/IEC 24752-4	Information technology -- User interfaces -- Universal remote console -- Part 4: Target description
ISO/IEC 24752-5	Information technology -- User interfaces -- Universal remote console -- Part 5: Resource description
ISO/IEC 24752-6	Information technology -- User interfaces -- Universal remote console -- Part 6: Web service integration

Standards under current or future (2016) Systematic review

Number	Title	WG
ISO/IEC 11581-10:2010 (Ed. 1)	Information technology -- User interface icons -- Part 10: Framework and general guidance	7
ISO/IEC 13066-1:2011 (Ed. 1)	Information technology -- Interoperability with assistive technology (AT) -- Part 1: Requirements and recommendations for interoperability	6
ISO/IEC 15897:2011 (Ed. 2)	Information technology -- User interfaces -- Procedures for the registration of cultural elements	5
ISO/IEC 11581-40:2011 (Ed. 1)	Information technology -- User interface icons -- Part 40: Management of icon registration	2

1.4 CO-OPERATION AND COMPETITION

Liaisons

SC35 maintains **liaisons** with the following JTC1 subcommittees, ISO, IEC, CEN Technical committees.

ISO/IEC JTC 1/SC 2	Coded character sets
ISO/IEC JTC 1/SC 36	Information technology for learning, education and training
ISO/TC 145	Graphical symbols
ISO/TC 159	Ergonomics
ISO/TC 159/SC 4	Ergonomics/ Ergonomics of human system Interaction - Software ergonomics and human - computer dialogues
IEC TC 3/SC 3C	Information structures, documentation and graphical symbols
JWG 11 ISO/TC 145– IEC TC 3/SC 3C	Joint working group ISO/TC 145-IEC/SC 3C

SC35 also maintains contacts with the following category C liaisons:

W3C	World Wide Web consortium

Cultural and Linguistic Adaptability and User Interfaces

SC 35 has the mission to consider how to integrate the requirements for Cultural and Linguistic Adaptability and User Interfaces (CLAUI) aspects in products standards so that software and hardware be adapted to local cultural and linguistic needs.

JTC 1/SC 35/WG 5, "Cultural and linguistic Adaptability" focuses directly on establishing recommended practices on how to evaluate CLAUI in ICT products. The Technical Report "*Guidelines, methodology, and reference criteria for cultural and linguistic adaptability in information technology products*" issued by SC35/WG 5 both in English and French, is a most relevant tool to ensure CLAUI.

The ISO/IEC 9995 multi-part standard, "*Information technology- Keyboard layouts for text and office systems"* under the responsibility of WG 1, defines important aspects to enable keyboards to enter the full ISO 10646 universal characters set (UCS) and also the allocation of Latin letters to the keys of numeric keypads. It is currently undergoing important revision and additions (part 9 and 10).

An active and fruitful cooperation has been set in this domain with CEN/ISSS WS MEEK on Multilingual Extensions for European Keyboards.

The 11581 series "*Information technology - Icon symbols & functions*" in the hands of WG 2 and WG 7 provides language-independent means of communicating information.

Two WG 6 technical reports published in 2007 cope with the key new topic that is e-Accessibility standardization, which means participation for all citizens worldwide in a knowledge-based economy, and making web content and ICT systems accessible to people with special needs including the children, elderly and disabled. The subject described within those Technical reports are :

- ISO/IEC TR 19765,"*Survey of existing icons and symbols for elderly and disabled persons*;
- "*ISO/IEC TR 19766, "Requirements concerning icons and symbols in IT for elderly and disabled persons*".

Those TRs have CLAUI implications.

As stated in the Cooperation and Coordination of Cross Cultural and linguistic matters (CCCCLM), held in June 2003 in Geneva, Switzerland, the "*particular expertise*" of SC 35 in Cultural and Linguistic adaptability (CLA) was formally recognized and referred to in the following recommendation (R5) "*CCCCLM notes JTC 1/SC 35 has particular expertise in CLA (culture and linguistic adaptability) user interface requirements… and suggests that other SCs take advantage of that expertise when they have questions regarding cultural and linguistic adaptability issues in their work*".

The participation in different international events like WSIS (World Summit on Information Society) or Barcelona Forum also concurred to those aims.

Accessibility and User Interfaces

IT Accessibility matters to an important and growing population around the world. Situations such as handicap persons, ageing populations, people working in noisy environments,

limited use of hands (e.g. while driving or typing)… all of these examples may result in specific, permanent or temporary user needs that IT User interfaces help address. Equal access to IT devices, electronic information and interactions is central not only to secure wider products adoption, but also to facilitate employment, and enable all users with means of socialization, business interactions or citizenship rights.

With the creation of WG 6 "User interface accessibility", SC 35 work now benefits from a full standardization community dedicated to IT accessibility and Design for all. WG 6 is now responsible for the accessibility work (including the ISO/IEC 29138 multi-part standard on "Information technology — Accessibility considerations for people with disabilities") previously dealt with by JTC1/SWG-Accessibility. This makes WG 6 the main source of IT Accessibility standardization within JTC1. Among the main achievements is the development of a Multi-part standard (ISO/IEC 13066) on "Information technology – Interoperability with Assistive technology (AT)" that encompasses all major APIs and a Multi-part standard (ISO/IEC 20071) on "Information technology - User interface component accessibility.

2.0   PERIOD REVIEW

2.1   MARKET REQUIREMENTS

Information and communication technologies (ICT) are used in every conceivable area of life. There is a 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. There is especially a need to develop market-relevant standards enabling the Cultural and linguistic concept to be implemented in ICT products.

Besides, the growth of the elderly population of industrialized countries and the growing concern for disabled drive a stream of user's needs and accessibility requirements that can partially be addressed by SC 35 standards in the context of its scope. To help to achieve those goals SC35 is actively maintaining documents originally developed by JTC1/SWG A on accessibility (disbanded 2014).
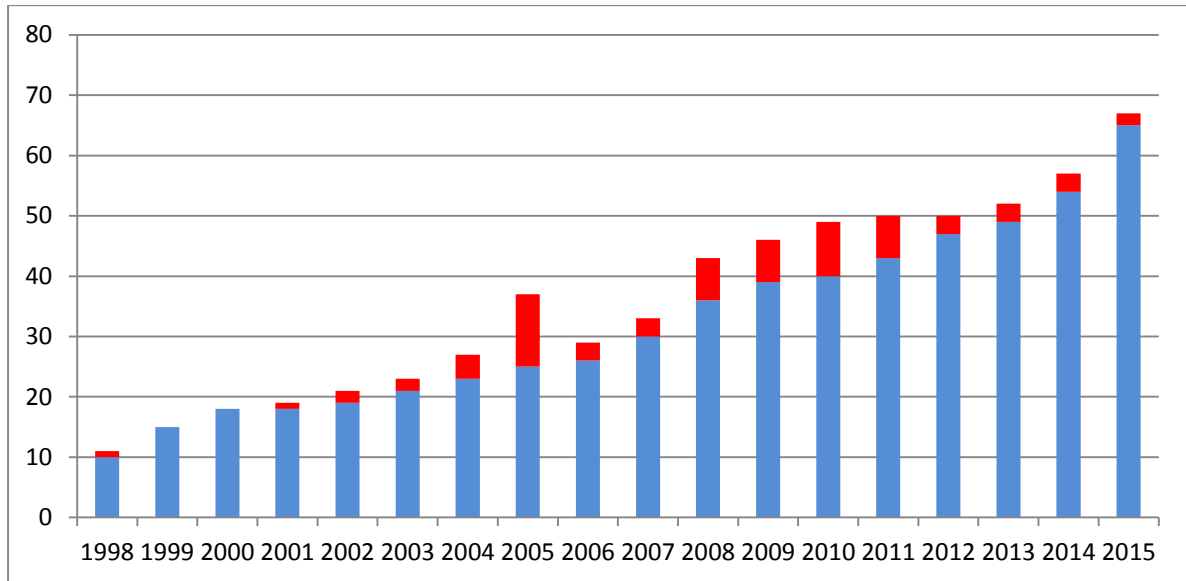
2.2 METRICS

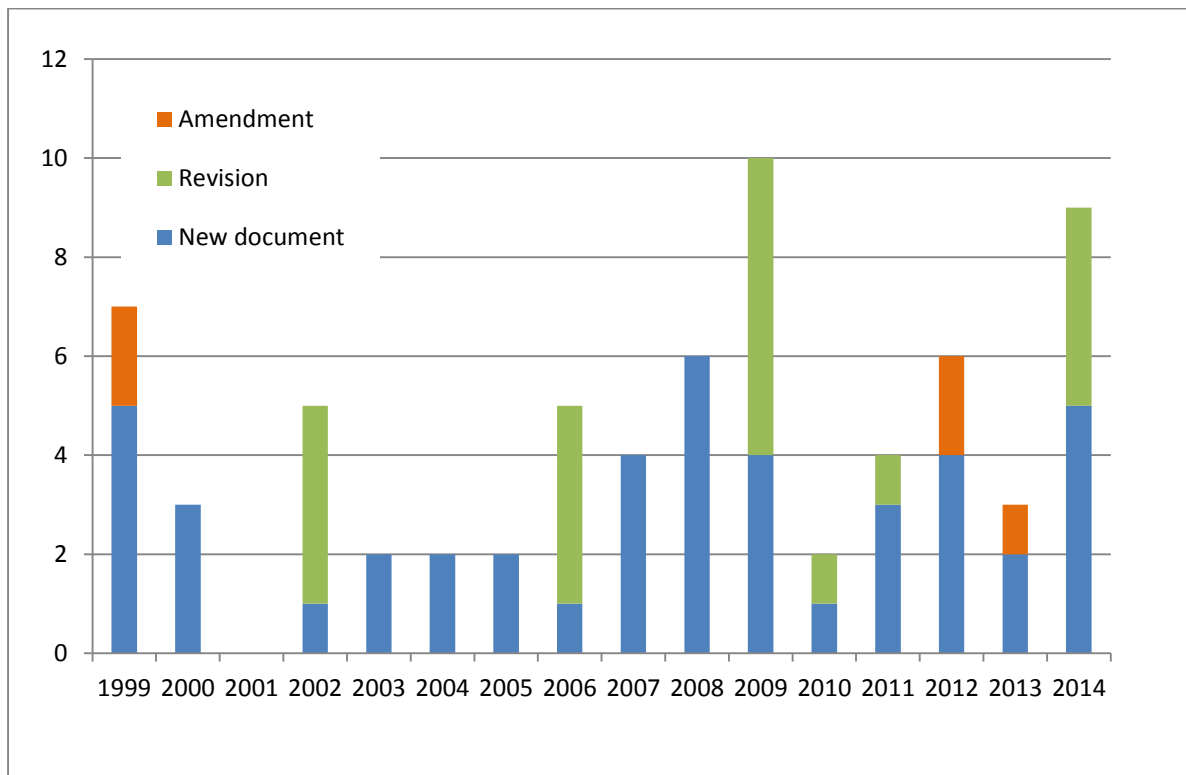| Year	Documents published				With-drawn	Total published documents	New projects
	New documents	REV	AMD	**Total**			
1998						**10**	**1**
1999	5		2	**7**		**15**	
2000	3			**3**		**18**	
2001						**18**	**1**
2002	1	4		**5**		**19**	**2**
2003	2			**2**		**21**	**2**
2004	2			**2**		**23**	**4**
2005	2			**2**		**25**	**12**
2006	1	4		**5**		**26**	**3**
2007	0			**4**		**30**	**1**
2008	0			**6**		**36**	**14**
2009	4	6		**10**	1[1]	**39**	**4**
2010	1	1		**2**		**40**	**4**
2011	3	1		**4**		**43**	**8**
2012	4		2	**6**		**47**	**9**
2013	2		1	**4**		**49**	**2**
2014	5	(4)		**9**		**54**	**3**
2015[2]	3 (11)	(1)		**3 (12)**		**57 (65)**	**2**

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[1] TR 24784 withdrawn after its recommendations were implemented in a revision of ISO/IEC 9995 series

[2] Figures for 2015 between brackets as anticipated from Work program on 2015-09-21

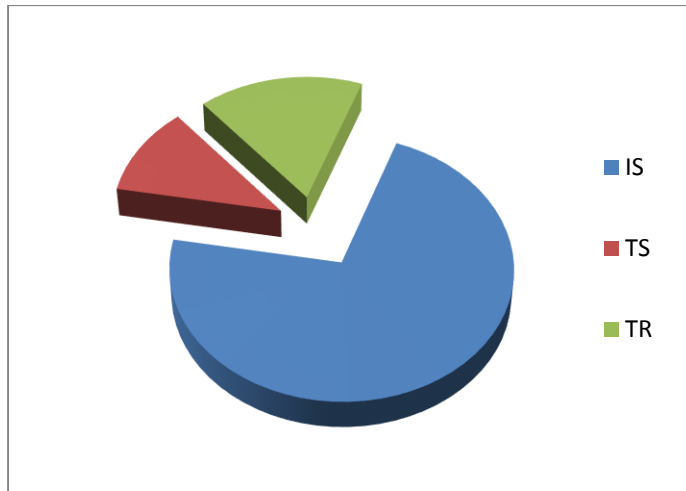### JTC 1/SC 35 Published documents and New work items

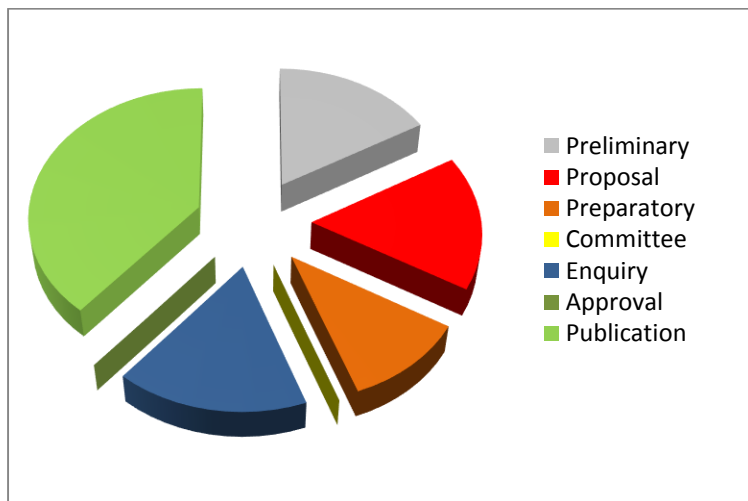### Publications by type
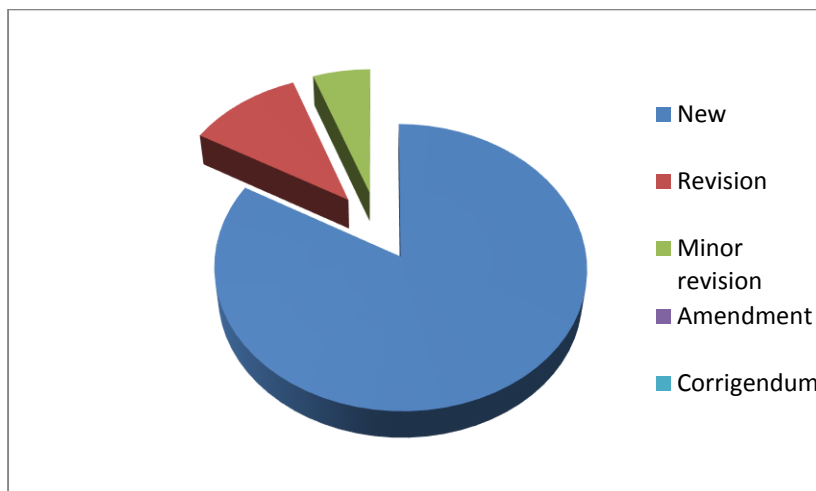
2015 work items

Document type

Document stage

Lifecycle of document in work programme

2.3 RESOURCES

Projects are well staffed and resources are adequate for the current tasks.

JTC 1/SC 35 has participants with substantial expertise. However to cover future necessary developments, it is needed to attract new highly trained experts representing the market players and willing to actively contribute to the development of new projects.

A current consolidation of various member countries' participation to JTC 1/SC 35, involving key software and hardware industry players, reinforces the representation of stakeholder interests and expertise, and is already bringing in highly valuable technical inputs into the standardisation process.

3.0 FOCUS NEXT WORK PERIOD

JTC 1/SC 35 plans to continue to focus on user requirements, product-oriented and market-driven standards and initiating new projects that have clear and well-defined objectives together with concrete specifications.

Substantial work has already been done to elicit new proposals in fields consistent with the needs of the market and the strategic orientations of SC 35. New proposals, Preliminary work items and other consideration of possible work address mobile applications and uses, and standards, alternative command interfaces and access to content.

This is illustrated in the New proposal for Face to face speech translation (under ballot), the ISO/IEC 30122 series on Voice interfaces and the ISO/IEC 30113 series on gesture-based interfaces. Alternatives for access to the content component of interfaces are addressed by the ISO/IEC 20071 series. Additional work on "Methods and techniques supporting the accessibility of systems" – and equally potentially long series of standards and technical specifications – is being planned.

3.1 DELIVERABLES

A list of ongoing projects and their status is proposed on page 6.

3.2 STRATEGIES

WG1 plans to continue the work on existing projects (**in particular ongoing gesture-based projects**, **potential revision of ISO/IEC 9995** as informally requested by China and Germany during systematic review), in addition to try to create new work items based on TR 15440 recommendations, the first examples of which would include :

- IS or TS on the selection and description of various worldwide input methods
- Work item to incorporate a catalogue of different character groups in an existing partof ISO/IEC 9995
- IS for a universal human language selection method for all user interfaces
- IS or TS on machine-readable description of input methods
- TS on interacting with on-screen keyboard
- TS on input method related output method and transformation and fallback

Furthermore, at the suggestion of Korea, the scope of WG1 should include output methods and devices in addition to keyboards and input device and methods. Several examples of interaction between output ad input have been discussed during the WG meeting, as well as the need to provide tools for measuring adequation between intended input and rendered output.

WG 5 develops standards to support cultural and linguistic adaptability and accessibility.

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

Examples of possible future projects within these areas of interest include:
- Universal interface to choose language/locale;
- Interfaces and language support for connected objects / Internet of things;
- Multilingual content edition, management and maintenance (Content management systems, automated updates and synchronisation…) for text, voice or other modalities;
- Multilingual web internationalisation (URL policy, mobile applications, linked data…);
- Guidelines for interface and website translation, including machine translation.

WG 6 is progressing on a number of prospective items, including a revision of ISO/IEC TR 29138-1 (formerly developed by JTC 1/SWG A) "User needs summary". Further parts of the 20071 series on User interface component accessibility are planned to cover as many component accessibility techniques as can be standardized with stakeholder support. Additional work on "Methods and techniques supporting the accessibility of systems" – and equally potentially long series of standards and technical specifications – is being planned.

WG 8 is actively investigating the following future items to complete the 24752 Series on Universal remote consoles and keeping the series up to date with latest developments in internationally recognized technologies:

- Potential IS 24752-7: RESTful Target Integration
- Potential IS 24752-8: User Interface Resource Framework

3.2.1 RISKS

A risk may come from the **potential conflicting proprietary and de facto standards**.

A second risk may be raised by the difficulties in supporting standardization efforts for **lack of availability and time from experts**, especially those willing to take part in the writing of projects, and increasing **financial difficulties** to participate.

One of the keys to the growth of the SC membership is to **attract** experts from **companies, research centres,** and **government agencies** but also to try to **develop** the **participation** of **users** and **consumers' organizations, unions, family associations**…

Being **more involved in the international cooperation process** (e.g. **WSIS**) could help to increase the number of countries participating especially those unable to join for financial reasons.

National bodies' participation in **new proposals** is crucial to develop standardization programmes. NSB's should realize that the cost of participation in a new project is less demanding than it may appear. JTC 1/SC 35 takes advantage of Internet or various other communication devices like telephone conferencing as recommended at JTC 1 level to encourage more countries to effectively participate in the writing of standards or join the standardization work.

Because of the **rarity of experts in some technical areas** and the **increasing geographical concentration of the industry**, this flexibility is a priority to avoid the decline of ICT standards production in various domains in the near future.

3.2.2 OPPORTUNITIES

JTC 1/SC 35 notes that new standardisation endeavours cover not only technical requirements or methods to ensure cultural and linguistic adaptability or accessibility of user interfaces, but that guidance is increasingly needed on the innovation, management or conception processes leading up to the development of User interface solutions. SC 35 has the necessary expertise to provide this guidance in the form of standards or technical specifications.