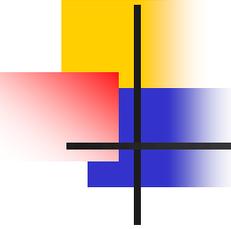# ITU Workshop on Enhancing human life using e-Service

ISO/IEC SC35 current and future standardization on user interfaces

Khalid Choukri

Chairman ISO/IEC JTC1 SC35,

European Language Resources Association (ELRA/ELDA)

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SC35 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.
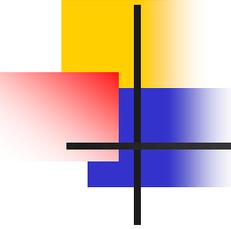
ITU Workshop on
Enhancing human life using e-Service

➢ _SC35 is about user interfaces & accessibility_

➔ _Human Life & e-Services_

➔ _Boost of AI (ASR, MT, S2S) but also new concerns about transparency, trust and privacy safeguarding_

_ASR= Automatic Speech Recognition_

MT Machine Translation

S2S Speech to Speech Translation (but also Modality A— Modality B Conversion)

ISO JTC1 IEC
INFORMATION TECHNOLOGY STANDARDS

Scope:

Standardization in the field of user-system interfaces in information and communication technology (ICT)

- 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 <u>controlling and navigating</u> 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 <u>input and output devices and methods </u>in ICT environments (for devices such as keyboards, displays, mice...);**

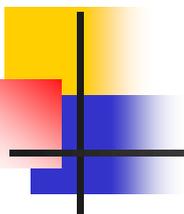- user interfaces for mobile devices, hand-held devices and remote interactions.
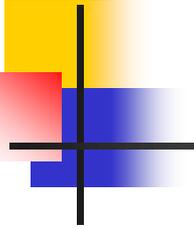
Dimensions of the Human Languages Input, output , Computer-mediation, …

- Speech
- Text inc. documents management (structure)
- Signs
- Hand writing
- Gestures … pointing
- Images
- Biometrics
- …. Multimodal & Multimedia
- ……

Multilinguality

72

published ISO
standards*

14

ISO standards
under
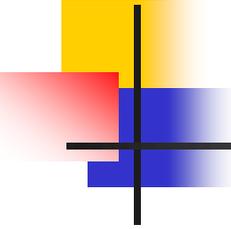development·

17

Participating
members

18

Observing
members

Liaison Committees from ISO/IEC JTC 1/SC 35

ISO/IEC JTC 1/SC 35 can access the documents of the committees below:

10

The 2015, the UN set an ambitious 15-year plan

Organizations in liaison (Category A and B)

Acronym	Title	Category
ETSI	European Telecommunications Standards Institute	A
ITU	International Telecommunication Union	A

Organizations in liaison (Category C)

C liaisons participate at the level of a Working Group

| Acronym	Title	Category
W3C	World Wide Web Consortium	C

Some SC 35 key contributions

ISO/IEC 30071-1

Information technology -- Development of user interface accessibility -- **Part 1: Code of practice for creating accessible ICT products and services**

ISO/IEC 29138-1 "Information technology – User Interface accessibility – **Part 1: User accessibility needs", evolution of the 2009 Std.**

MultiModal input …. Multimedia output … MultiLingual Context
Speech, Text, Sign, Images, Videos ⬅…➡ Speech, Text, Sign, Images, Video
Transcription, Audio(-Description), Sub-titling, Translation,
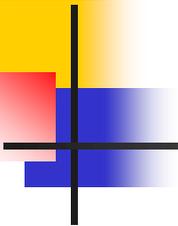
Work on projects within the ISO/IEC 20071 User interface component accessibility series

- *ISO/IEC TS 20071-25 Information technology – User interface component accessibility – Guidance on the audio presentation of text in videos including captions, subtitles, and other onscreen text*
  - This document has passed its PDTS ballot with only editorial comments and is now being processed by ISO for publication as a TS.

- *ISO/IEC 20071-23 Information technology – User interface component accessibility – Guidance on the visual presentation of audio information (including captions and subtitles)*
  - This document will be going out for CD ballot in October, 2016.

- *ISO/IEC TS 20071-15: Information technology – User interface component accessibility – Scanning visual information for audio presentation*
  - This document has passed its NO ballot and is being further developed for the next WG meeting, after which it is expected to go out for a PDTS ballot.
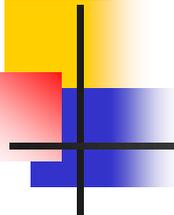
Sign languages for use in video content

[ISO/IEC TR 20007:2014](#)

Information technology -- Cultural and linguistic interoperability --

ISO/IEC JTC1/SC35
- requests that Dr. David Fourney continue to develop material **on the use of sign languages within the context of ISO/IEC 20071-2x;**
- requests that Dr. Fourney explore opportunities with ITU-T Q26/16 for cooperation the development of a standard that fits within this context;
- requests that Dr. Fourney develop a working draft for this project no later than 2019-11-30 and send it to the WG6 convenor for posting as a WG6 document.
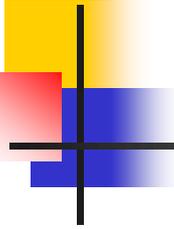
Unanimously approved
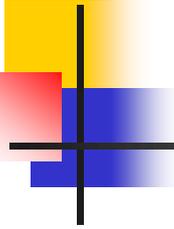
Easy to Read

ISO/IEC TR 20007:2014
Information technology -- Cultural and linguistic interoperability --

PWI 20071-31 "Information technology -- User interface component accessibility -- Part 31: Guidance on making content "Easy To Read"

➜ From all perspectives
  - Linguistic
  - Cognitive
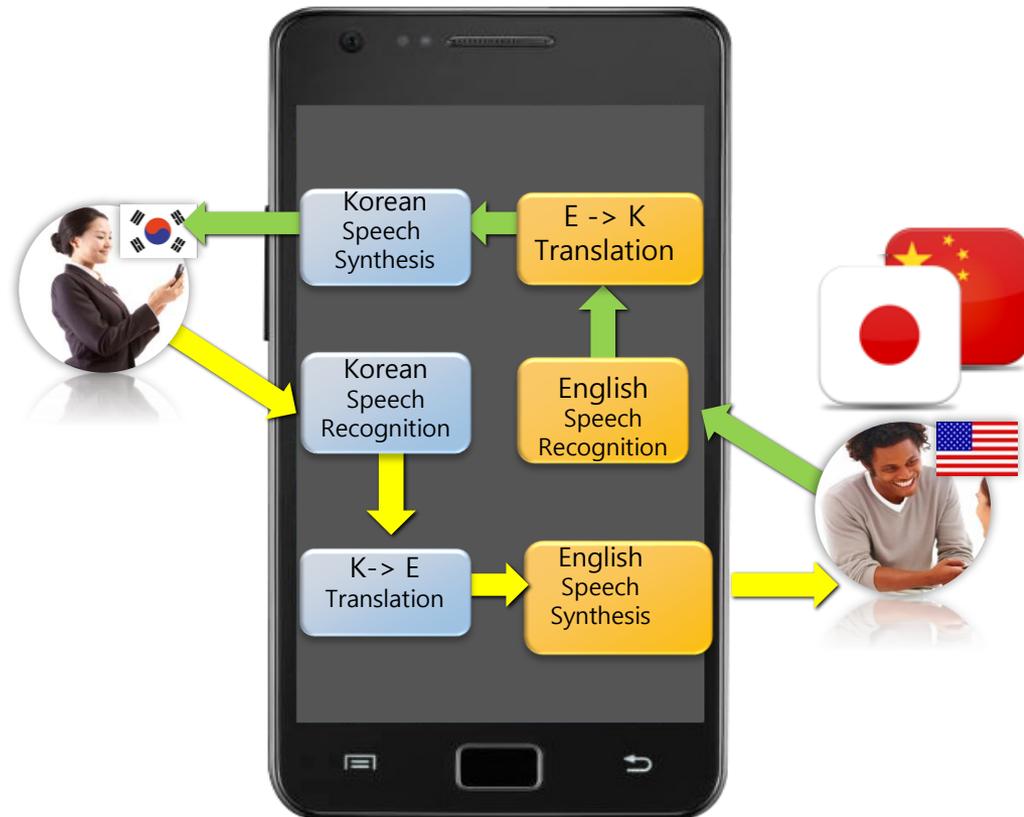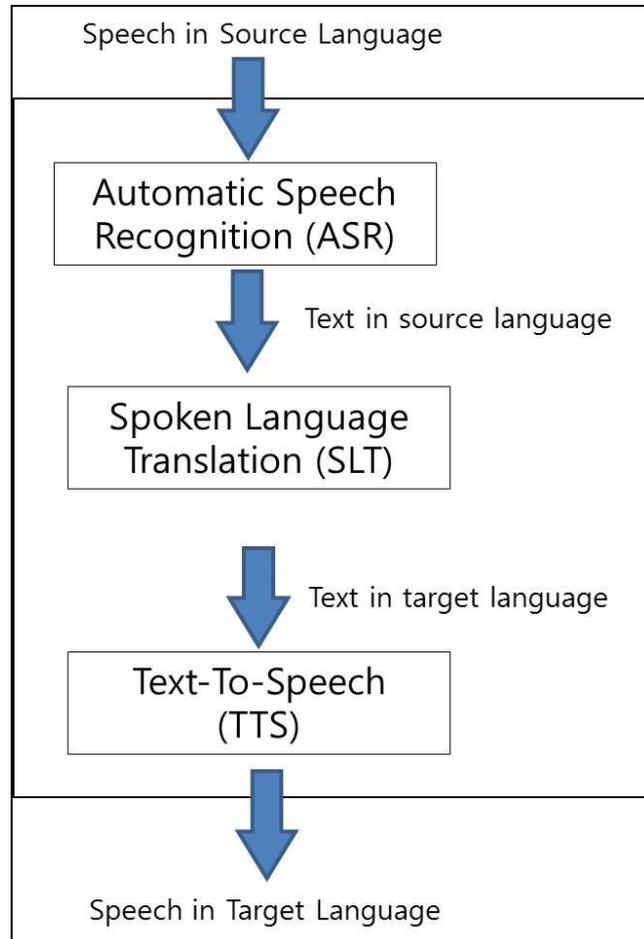 - Interfaces & Devices
  - Modalities

What is very new …

- **Affective Computing user interfaces:**
  - **Targeting consideration of emotions, sentiments, moods, and other affective instances when designing interfaces and interactions.**

- *Face to Face translation*

- *Simultaneous Interpretation interfaces*
  - *versus Face to Face Translation*
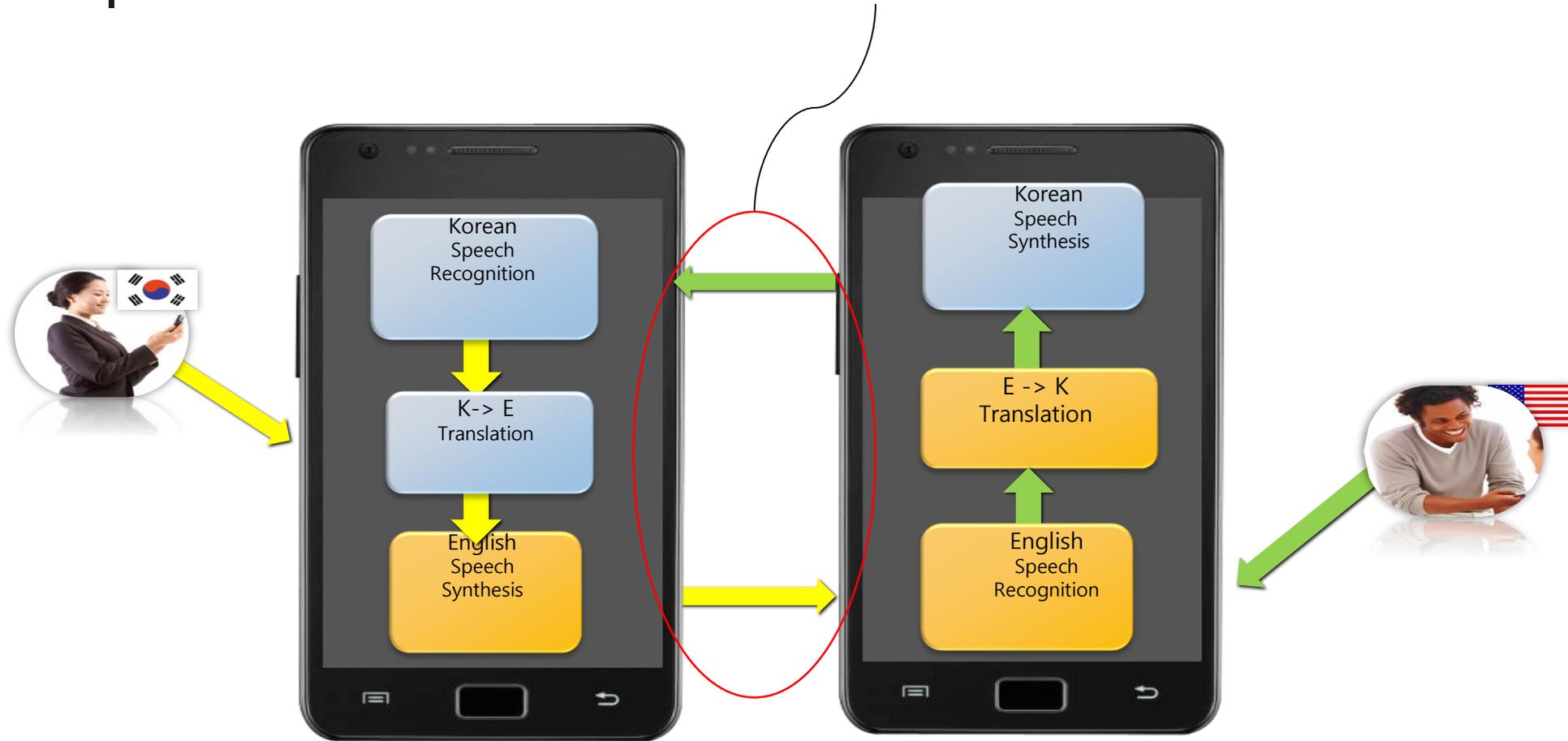
- *"Easy to read"* ⇐

Speech to Speech Translation

"Technology that enables speakers of different languages to communicate"

Speech to Speech Translation

Should be standardized

Korean Speech Recognition

K-> E Translation

English Speech Synthesis

Korean Speech Synthesis

E -> K Translation

English Speech Recognition

2009

Hello. Nice to meet you!
(Hello, nice to meet you.)

Hola, encantado de conocerle.

JIBBIGO

SC35/KC 17
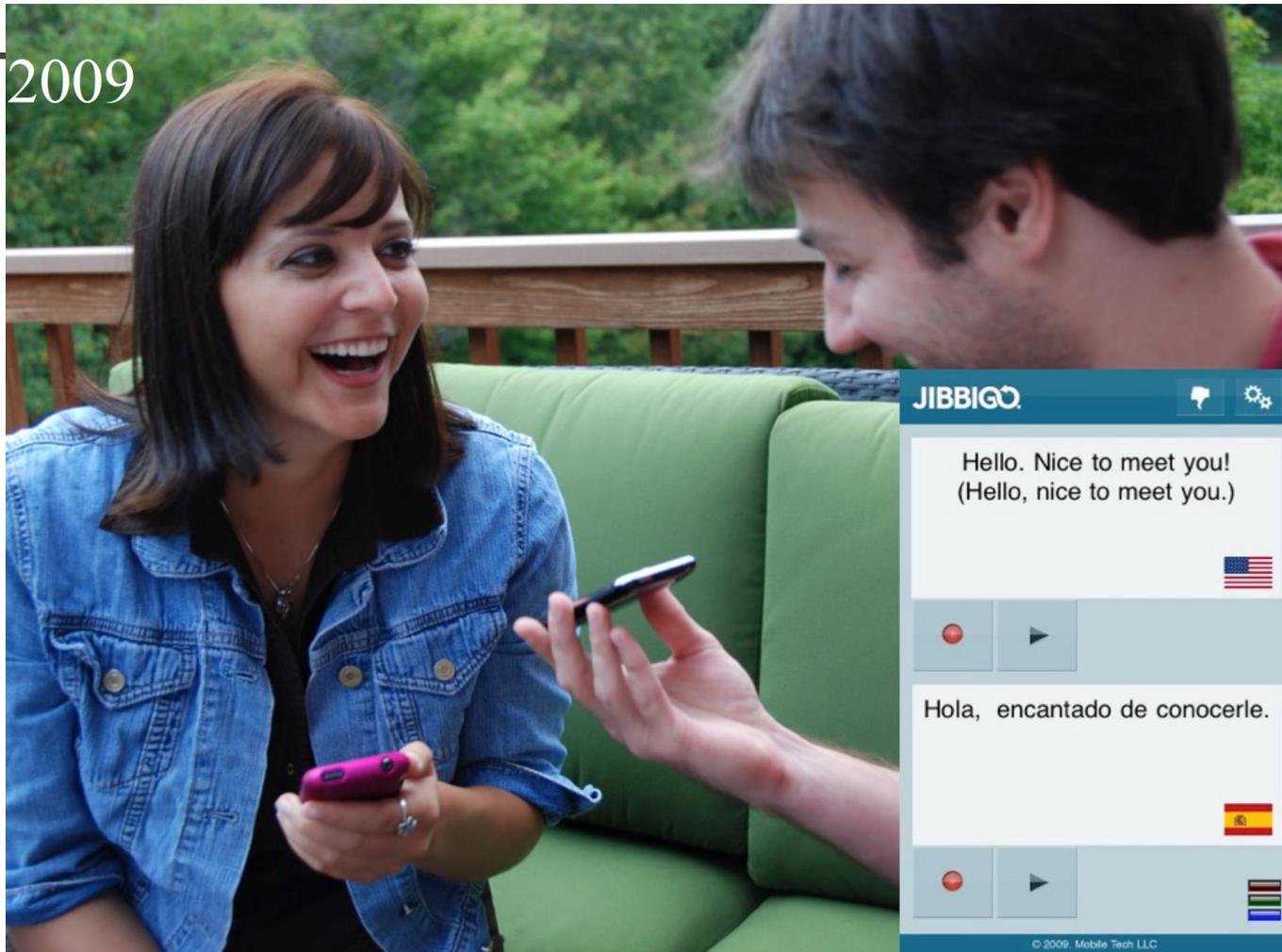
Lecture Translator in Karlsruhe
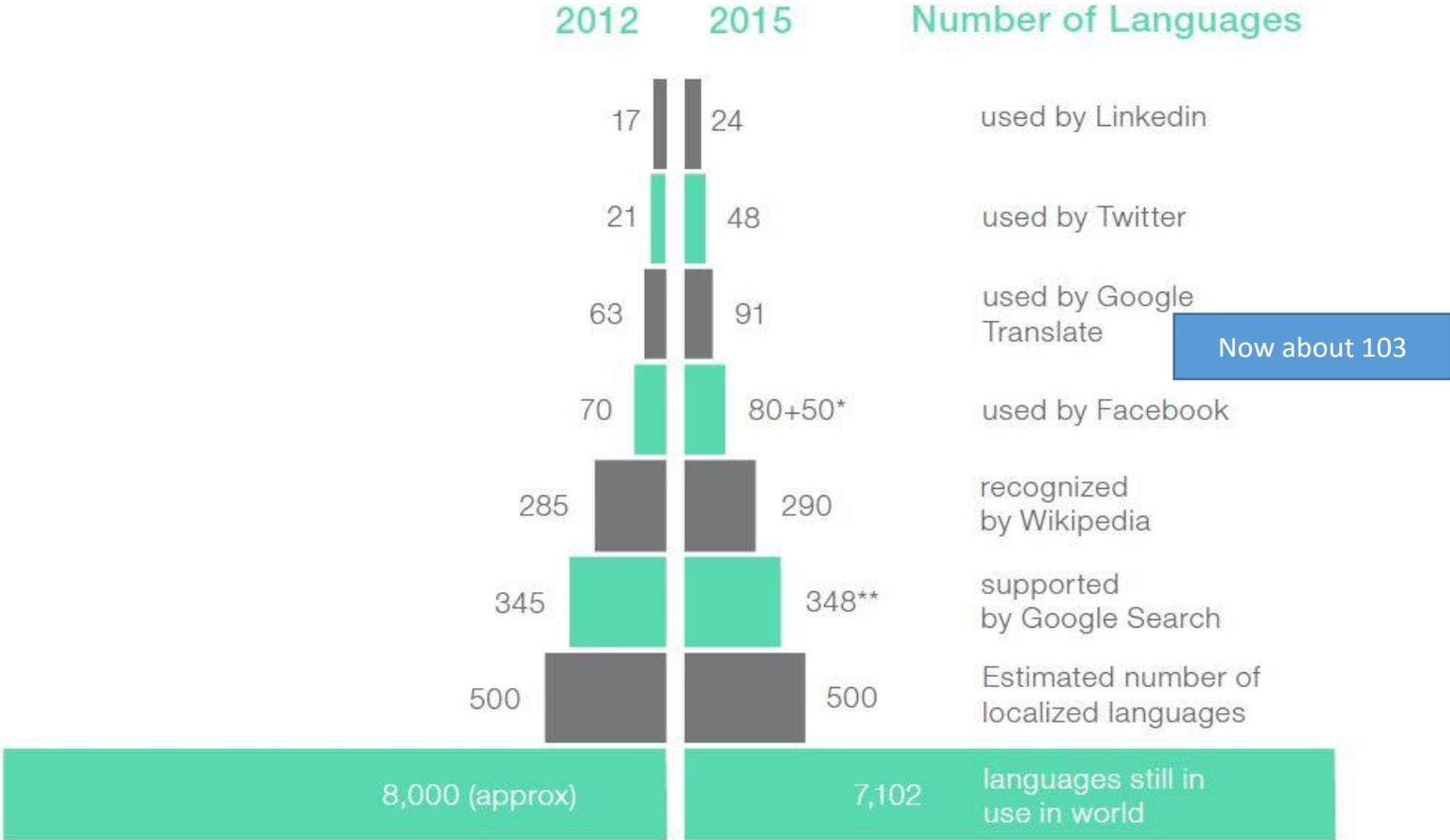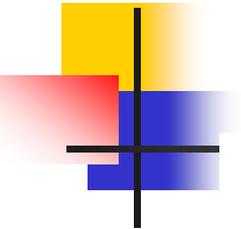
SC35/KC 18

Back to basics ....

2012   2015   **Number of Languages**

2012	2015	
17	24	used by Linkedin
21	48	used by Twitter
63	91	used by Google Translate
70	80+50*	used by Facebook
285	290	recognized by Wikipedia
345	348**	supported by Google Search
500	500	Estimated number of localized languages
8,000 (approx)	7,102	languages still in use in world

Now about 103

ISO JTC1 IEC
INFORMATION TECHNOLOGY STANDARDS

European Parliament resolution of 11 September 2018 on language equality in the digital age (2018/2028(INI))

whereas language technologies can make communication easier for the deaf and hard of hearing, the blind and visually impaired and those with dyslexia and whereas, for **the purposes of this report, 'language technology' refers to technology that supports not only spoken languages, but also sign languages,** recognising that sign languages are an important element of Europe's linguistic diversity;

European Parliament resolution of 11 September 2018 on language equality in the digital age (2018/2028(INI))

> **"18. Calls on the Commission and the Member States to develop strategies and policy action to facilitate multilingualism in the digital market; requests, in this context, that the Commission and the Member States define the minimum language resources that all European languages should possess, such as data sets, lexicons, speech records, translation memories, annotated corpora and encyclopaedic content, in order to prevent digital extinction;"**

Conclusions … Accessibility within ISO/IEC JTC 1/SC 35
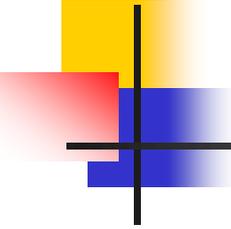
- Accessibility means a high degree of customization and personalization of interfaces

- Collection and compilation of (Personal and Private) Data for the Data Driven Paradigm inc. AI

- Privacy and Data Management issues (e.g. The EU *General Data Protection Regulation)*

- *Trust, Transparency , fairness & Ethics.*

To join SC35 choukri@elda.org
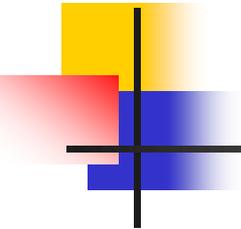
| Standard and/or pr[...] ̄ ̄ ̄SC 35 Secretariat (86)	Stage	ICS
ISO/IEC 9995-1:2009 Information technology -- Keyboard layouts for text and office systems -- Part 1: General principles governing keyboard layouts	90.93	•35.180
ISO/IEC 9995-2:2009 Information technology -- Keyboard layouts for text and office systems -- Part 2: Alphanumeric section	90.93	•35.180
ISO/IEC 9995-3:2010 Information technology -- Keyboard layouts for text and office systems -- Part 3: Complementary layouts of the alphanumeric zone of the alphanumeric section	90.93	•35.180
ISO/IEC 9995-4:2009 Information technology -- Keyboard layouts for text and office systems -- Part 4: Numeric section	90.93	•35.180
ISO/IEC 9995-5:2009 Information technology -- Keyboard layouts for text and office systems -- Part 5: Editing and function section	90.93	•35.180
ISO/IEC 9995-7:2009 Information technology -- Keyboard layouts for text and office systems -- Part 7: Symbols used to represent functions	90.93	•35.180
ISO/IEC 9995-8:2009 Information technology -- Keyboard layouts for text and office systems -- Part 8: Allocation of letters to the keys of a numeric keypad	90.93	•35.180
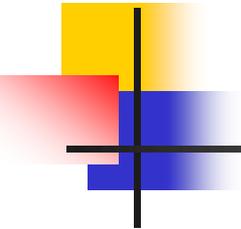
ISO/IEC TR 11580:2007
Information technology -- Framework for describing user interface
objects, actions and attributes

90.93

•35.240.20

ISO/IEC 11581-2:2000
Information technology -- User system interfaces and symbols -- Icon
symbols and functions -- Part 2: Object icons

90.93

•35.240.20

ISO/IEC 11581-3:2000
Information technology -- User system interfaces and symbols -- Icon
symbols and functions -- Part 3: Pointer icons

90.93

•35.240.20

ISO/IEC 11581-5:2004
Information technology -- User system interfaces and symbols -- Icon
symbols and functions -- Part 5: Tool icons

90.93

•35.240.20

ISO/IEC 11581-6:1999
Information technology -- User system interfaces and symbols -- Icon
symbols and functions -- Part 6: Action icons

90.93

•35.240.20

ISO/IEC 11581-10:2010
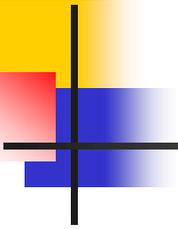Information technology -- User interface icons -- Part 10: Framework
and general guidance

90.93

•35.240.20

ISO/IEC 11581-40:2011
Information technology -- User interface icons -- Part 40:
Management of icon registration

ISO/IEC 9995-x:2009

Information technology -- Keyboard layouts

ISO/IEC TR 11580:2007

Information technology -- Framework for describing user interface objects, actions and attributes

ISO/IEC 13066-1:2011

Information technology -- Interoperability with assistive technology (AT) -- Part 1: Requirements and recommendations for interoperability

ISO/IEC FDIS 13251 [Under development]
Information technology -- Collection of graphical symbols for office equipment

50.20

ISO/IEC FDIS 30071-1 [Under development]
Information technology -- Development of user interface accessibility -- Part 1: Code of practice for creating accessible ICT products and services

50.20

ISO/IEC FDIS 30113-5 [Under development]
Information technology -- User interface -- Gesture-based interfaces across devices and methods -- Part 5: Gesture Interface Markup Language(GIML)

50.20

ISO/IEC 9995-9:2016/DAmd 1 [Under development]

40.60

ISO/IEC DIS 30113-12 [Under development]
Information technology -- User interfaces -- Gesture-based interfaces across devices and methods -- Part 12: Multi-point gestures for common system actions

40.60

ISO/IEC DIS 20071-11 [Under development]
Information technology -- User interface component accessibility -- Part 11: Guidance on text alternatives for images

40.00

ISO/IEC DIS 30150-1 [Under development]
Information technology -- Affective computing user interface (AUI) -- Part 1: Model

40.00

ISO/IEC CD 30112 [Under development]
Information technology -- Specification methods for cultural conventions

30.99

ISO/IEC CD 30113-61 [Under development]
Information technology -- Gesture-based interfaces across devices and methods -- Part 61: Single-point gestures for screen readers

30.99

ISO/IEC CD 9995-12 [Under development]
Information processing -- Keyboard layouts for text and office systems -- Part 12: Information technology -- Keyboard layouts for text and office systems -- Part 12: Keyboard group selection

30.60

ISO/IEC CD 30113-60 [Under development]
Information technology -- Gesture-based interfaces across devices and methods -- Part 60: General guidance on gestures for screen readers

30.00

ISO/IEC AWI 23773-2 [Under development]
User interface -- Simultaneous Interpretation System -- Part 2: Requirements and functional description

20.00

ISO/IEC AWI 23773-3 [Under development]
User interface -- Simultaneous interpretation system -- Part 3: System architecture

20.00

ISO/IEC AWI 23836 [Under development]
Information technology -- User interfaces -- Universal interface for human language selection

20.00