

Enhancing the User Experience

Human Factors in ETSI

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Ensuring that progress is good for the user

“I have always wished that my computer would be as easy to use as my telephone.”

“My wish has come true!”

“No longer how to use a telephone!”

Voicemail Stoustrup, inventor of C GPRS

MMS more free minutes EDGE Speed Dial

WCDMA PIN SIM SMS

Meeting real user needs

- ❑ **Introducing clever products and services doesn't guarantee market success**
- ❑ **Technology must address real user needs to be a major market success**
 - **videotelephony has been technically feasible in many generations – but it has never really had mass appeal**
- ❑ **Sometimes just changing the context of use creates successful new market sectors**
 - **listening to music has always been popular – but location was fixed**
 - **being able to listen anywhere created one of the most successful markets ever – music on the move**
 - **mobile data usage took-off when simple mobile applications could be used via an attractive and intuitive user interface**

Understanding user needs and abilities

- ❑ **Many basic user needs are simple to meet**
 - **but not always understood by those designing products and services**
- ❑ **Understanding human abilities and limitations is fundamental to product success**
- ❑ **Human abilities and limitations are well documented, but**
 - **ignoring them is one of the biggest reasons for user frustration and product rejection**
 - **poor user interfaces are usually caused by failure to consider these abilities and limitations**
- ❑ **Human abilities and limitations are not the same for all people in all circumstances**
 - **when using products or services in a car, people cannot safely read complex displays**
 - **inability to read displays is also an issue for blind users**

ETSI Human Factors aiding designers

- ❑ ETSI Human Factors has generated many practical standards and guides that:
 - identify core user needs for specific product sectors (e.g. mobile devices)
 - propose a minimum subset of functionality that can be implemented consistently across a product sector
 - fully support the commercial need to differentiate products through creative user interface design
- ❑ ETSI Human Factors has also identified aspects of product usage that are unique to specific contexts, for example:
 - public Internet terminals
 - ICT in cars
 - eHealth



Multimodality

- ❑ In the “real world”, conversation is a very dynamic process
 - the flow and pace is dynamic
 - overlaps and interruptions are essential elements of the flow
- ❑ Multimodal application can allow the use of all the human senses and create a very natural experience
- ❑ ETSI Human Factors has produced guides on the user aspects of multimodality
- ❑ It's specification on Duplex Universal Speech and Text (DUST) communications (EG 202 320) describes a service that supports
 - conversational character-by-character bidirectional text communication
 - simultaneous voice communication
 - the option to support video communication
- ❑ This can provide a greatly enhanced user experience

Losing potential customers

- ❑ In Europe and elsewhere the market for products includes people with a very wide range of cultural and linguistic backgrounds



- ❑ In the past there has been no simple way to address their needs

Broadening the customer base

ETSI Human Factors has created standards that are now being widely used to:

- provide multi-language support from telephone keypads for 101 languages in use in Europe

- provide a **used with** **es commonly es and services**

Table 1: Overview of languages covered and corresponding letter repertoire and ordering and keypad assignment table numbers

Table 1c: Basic commands (English, Estonian, Finnish, French, German)

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- few dev

Index	ICT device/service function	English	Estonian	Finnish	French	German
1.1	Confirm operation	Yes, Confirm	Jah, Kinnita	Jatka, Kyllä	OK, Oui	Ja, OK, Ausführen
1.2	Reject operation	No	Ei	En jatka, Ei, Keskeytä	Non	Nein
1.3	Wake-up the speech recognizer (ICT device or service in word spotting mode)	Wake-up, Activate	Hääl, Ava	Herätys, Aktivoi	Activer	Aktivieren, Start, Aufwachen
1.4	Enter idle mode	Standby, Lock	Lukusta, Hääl lukku	Lepotila, Lukitse	Veille	Stand-by
1.5	Terminate service/End Call	Goodbye, Exit	Lõpeta, Lõpp	Sulje, Lopeta	Quitter, Au revoir	Beenden, Ausschalten, Ende

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Providing a personalized user experience

- In a competitive environment it is uneconomic to produce products to suit every sub-sector of the potential customer base
- However, people will only buy products if they meet their fundamental needs and preferences
- This dilemma can be addressed by providing devices and services that can be easily personalized by the user

The ETSI personalization approach

- ❑ **ETSI Human Factors has documented a personalization approach that:**
 - **allows comprehensive personalization across a wide range of devices and services**
 - **requires minimum effort from the user for maximum effect**
 - **allows users to say how they would like their devices and services to behave in different contexts (e.g. locations, times)**

The ETSI personalization approach

- ETSI Personalization Factors has documented a personalization approach that...

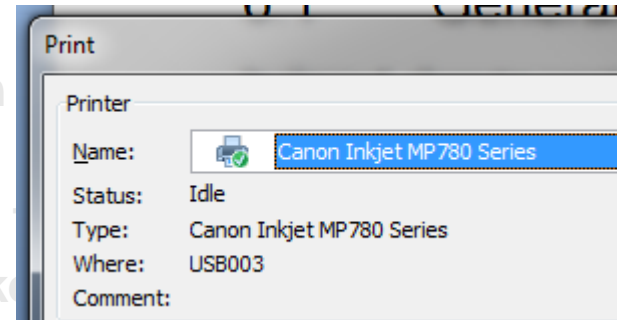
By Location



Home (UK)



Miles per Hour



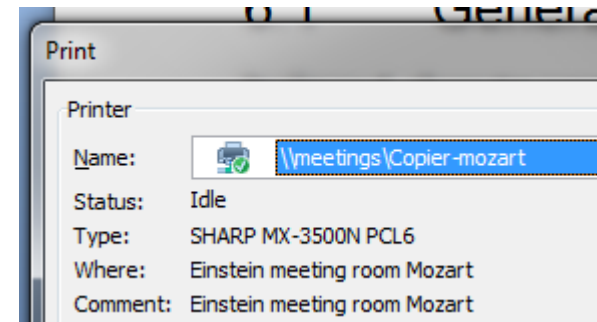
Home default printer



ETSI (France)



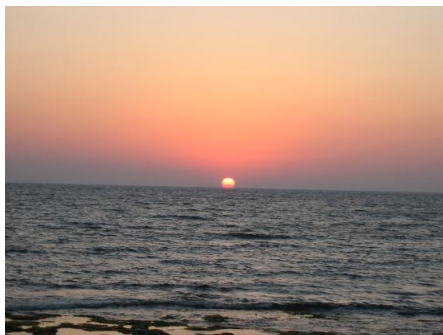
Kilometres per Hour



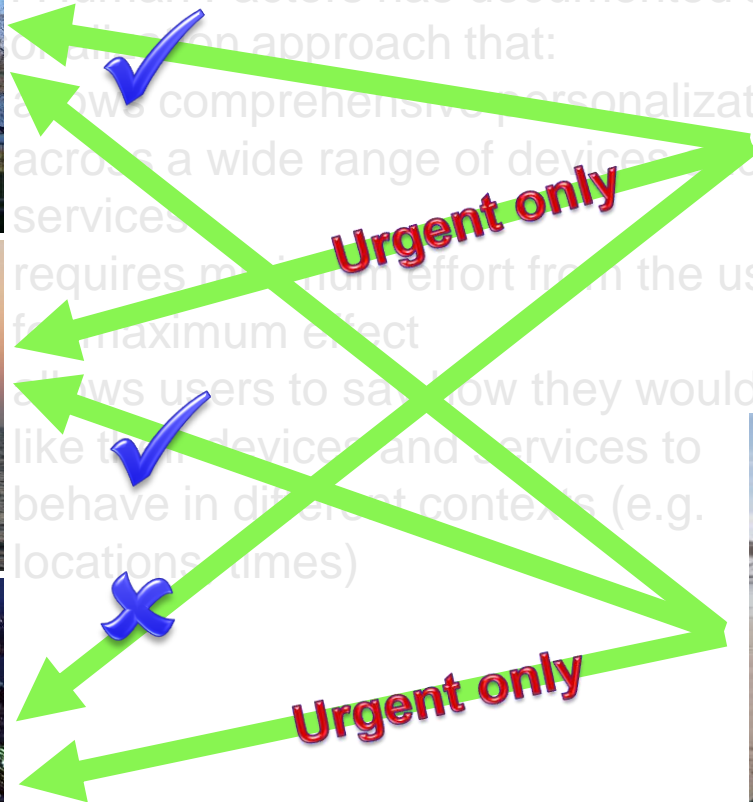
ETSI default printer

The ETSI personalization approach

By Time and Identity



Human Factors has documented a... approach that:
allows comprehensive personalization across a wide range of devices and services... requires maximum effort from the user for maximum effect... allows users to say how they would like their devices and services to behave in different contexts (e.g. locations, times)



The ETSI personalization approach

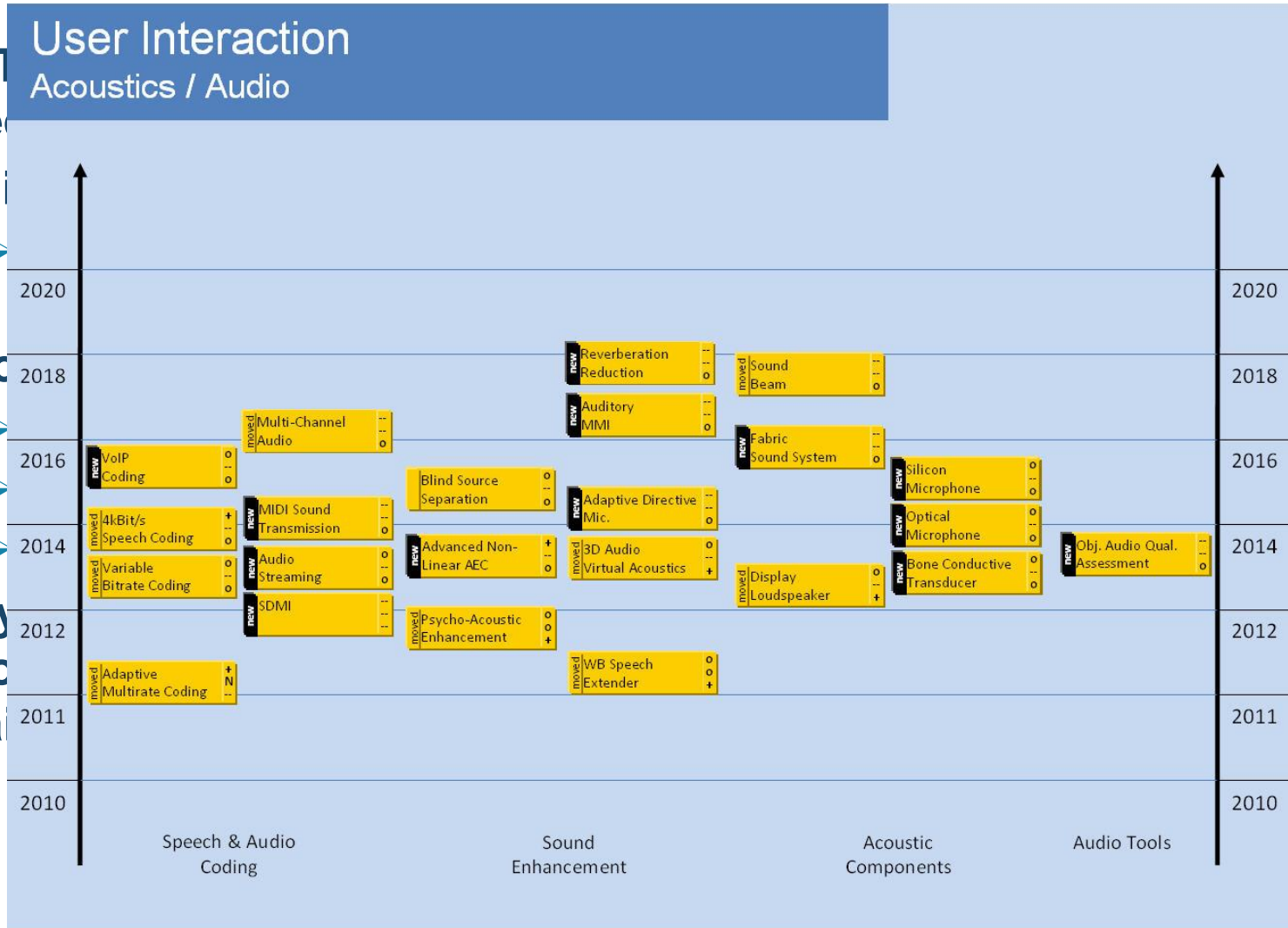
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- ❑ **Powerful personalization can make the customer feel a much greater attachment to their products (e.g. people love to personalize their phones with their own choice of “apps”)**

- ❑ **Personalization can allow many complex issues related to cultural diversity and disability to be addressed at minimal extra costs**

Anticipating the future

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- co
- fa



years

market

Helping industry meet future public policy needs

- ❑ There are Europe-wide policy initiatives to avoid people with disabilities from being excluded from use of ICT

- ❑ One approach will be the inclusion of accessibility requirements in contracts for public procurement of ICT products

- ❑ ETSI Human Factors is addressing potential future European public procurement accessibility requirements in a way that is:
 - effective
 - embraced by industry

Support in depth

- ❑ The world of ICT is becoming ever more diverse and fast moving
- ❑ It enters every aspect of the life of all people
- ❑ People are very diverse and have different needs
- ❑ They expect:
 - to use their product or service in an ever wider range of situations
 - to customize their user experience
- ❑ This offers a rich future for launching new products and services
- ❑ But as diversity and pace increase it is ever more important to ensure that:
 - the fundamental abilities and limitations of humans are not forgotten
 - the wealth of knowledge and experience from previous product generations is used
- ❑ ETSI Human Factors provides support to industry in relation to all of the above (and more)

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Thank you for your attention

Any questions?