



*Convegno
Ability*

Torino, 4 dicembre 2003

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Centro Comune Ricerca - Commissione Europea
Istituto per la Protezione e Sicurezza del Cittadino*





- ◆ 25% of EU anziani o disabili
(la perdita d'udito cresce con l'età)
- ◆ 5% of EU sordi o deboli d'udito

Immaginate per un istante di essere uno dei ...

- ◆ 300,000 sordi (0,1% della popolazione)
- ◆ 3,000,000 parzialmente sordi (1%)
- ◆ 30,000,000 deboli d'udito, svantaggiati o stranieri (10%)

...e cercate di leggere sulle mie labbra.



In generale, pensiamo che la **disabilità** riguardi solo **gli altri**.
La disabilità è un **loro** problema.

Noi, spingiamo la carrozzella di un altro.

Noi, aiutiamo un altro ad attraversare la strada.

Ma se vogliamo spiegare un grafico ad un non vedente,
il problema diventa **nostro**,
perché dobbiamo descriverlo in modo comprensibile.

Se vogliamo parlare ad un audioleso,

il peso della disabilità deve essere sopportato in parte da **noi**.

Abbiamo imparare a gestire un canale di comunicazione visivo,
tramite la lingua dei segni (conosciuta da una minoranza di audiolesi),
tramite la generazione di sottotitoli.

Vi invito a pensare che vi sia una barriera di vetro fra di noi
che dobbiamo leggere sulle mie labbra.



DEAFNESS: a disability concerning the **SPEAKER** and his control of the communication (*visual*) channel

We may help a person with physical impairment by pushing,
We may help a person with visual impairment in crossing the road,

We, the *able*, help him in **HIS** disability

DEAFNESS implies a communication limit

We must help a person with hearing impairment in understanding our message:

from spoken **VOICE** to visual **TEXT**

HIS communication problem becomes **OUR** disability



Helping European citizens overcoming languages gap

Dubbing in other languages

- very expensive and long delay (copyright: voice in the film)

Subtitling in the original language:

- simple, quick, un-expensive, (rights, ?copyright: added text)
(+ language training)

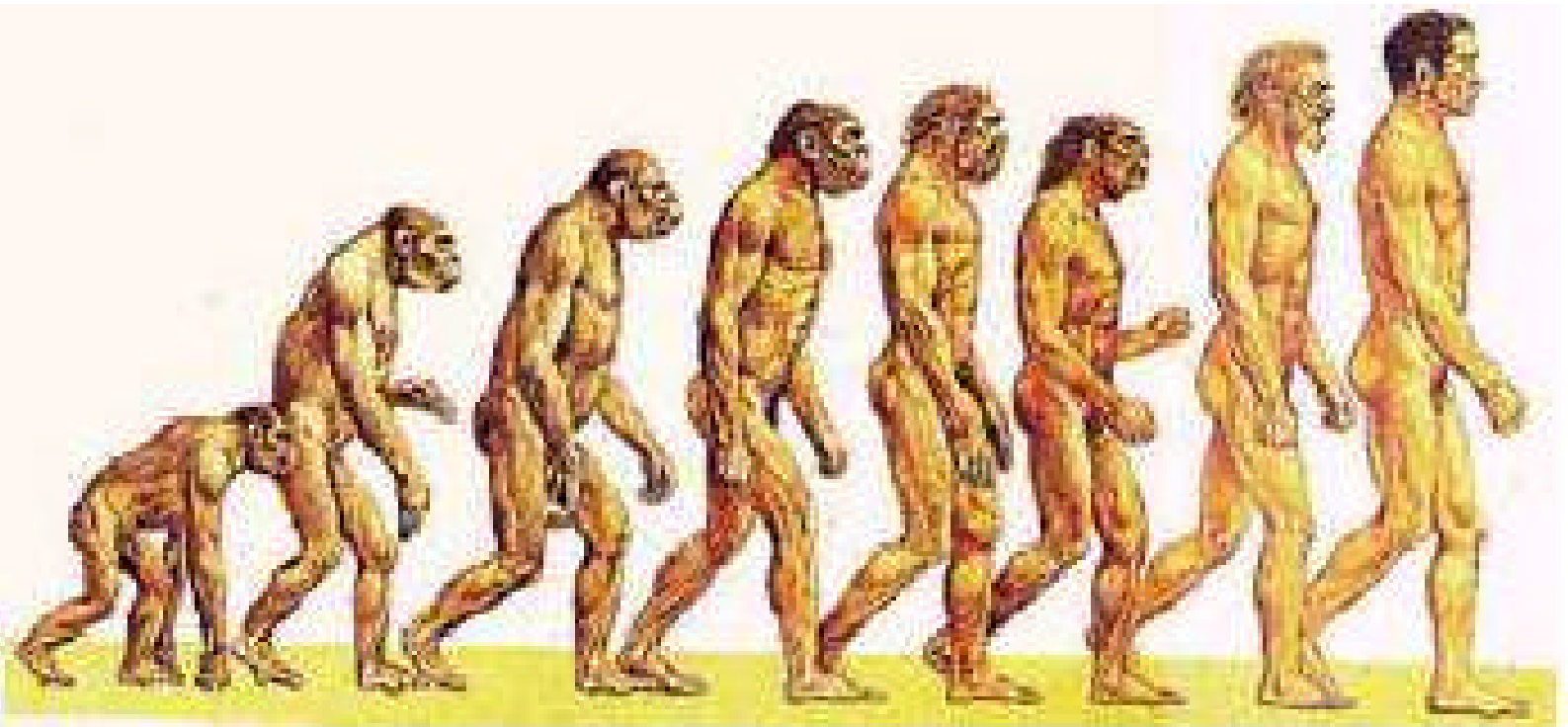
all users, seeing subtitles, even in the original language, helps understanding;
for the hearing impaired users, this is the only means of understanding

*Subtitling is one of the most powerful
learning and training tools of any language:
by reinforcing what is being learnt by hearing,
enriching the vocabulary, in context*



Le origini

Voice





I primi suoni

Voice



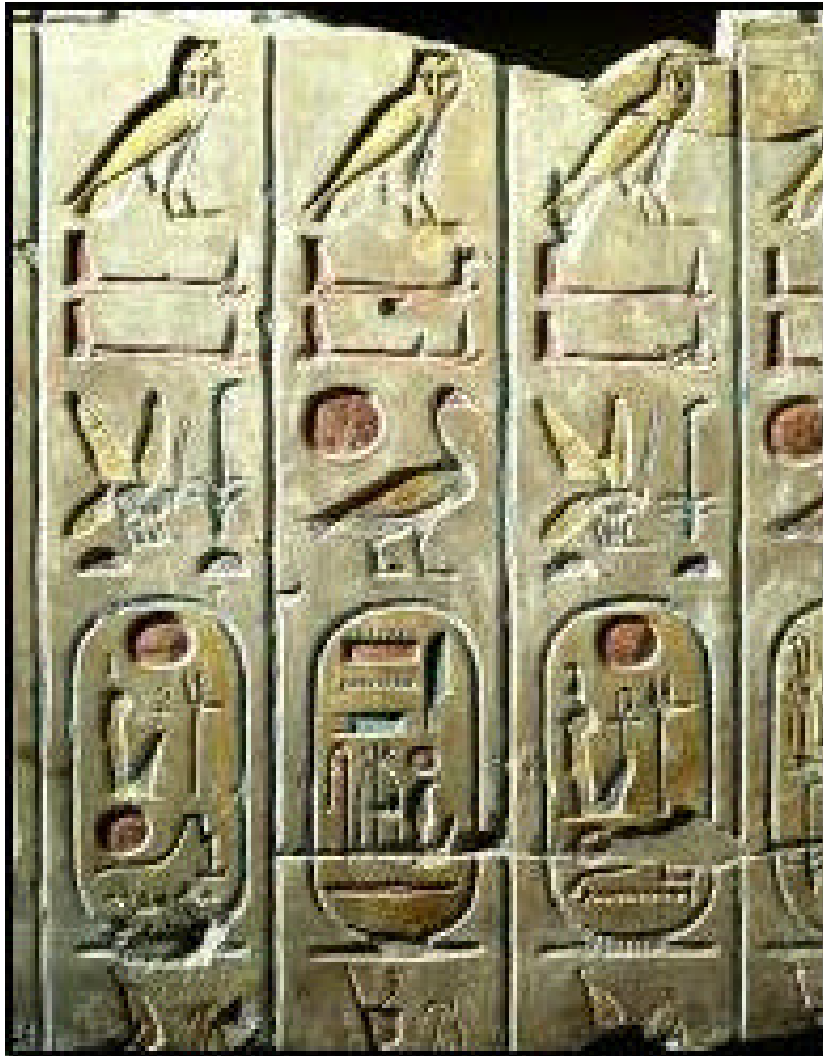
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La lingua scritta

Voice





I suoni e la cadenza

Voice





Il ritmo

Voice





I fonemi

Voice



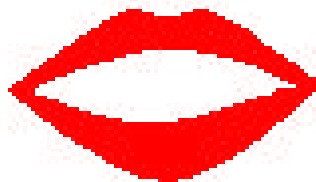


Promuovere l'uso dei sistemi di riconoscimento vocale per la sordità.

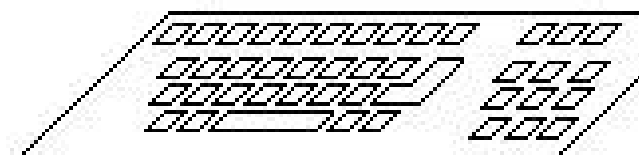
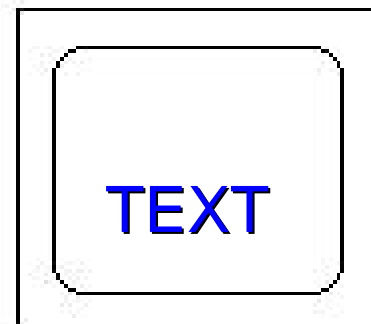
Esempio: un PC può riconoscere le parole e convertirle in testo, consentendo ad una persona sorda di *leggere* sullo schermo ciò che viene *detto*.

Sottotitoli per:

- ▶ scuola
- ▶ conferenze
- ▶ trasmissioni televisive
- ▶ conversazione telefonica



VOICE





Sottotitolazione



News Broadcasts,
Live TV shows,
weather reports,



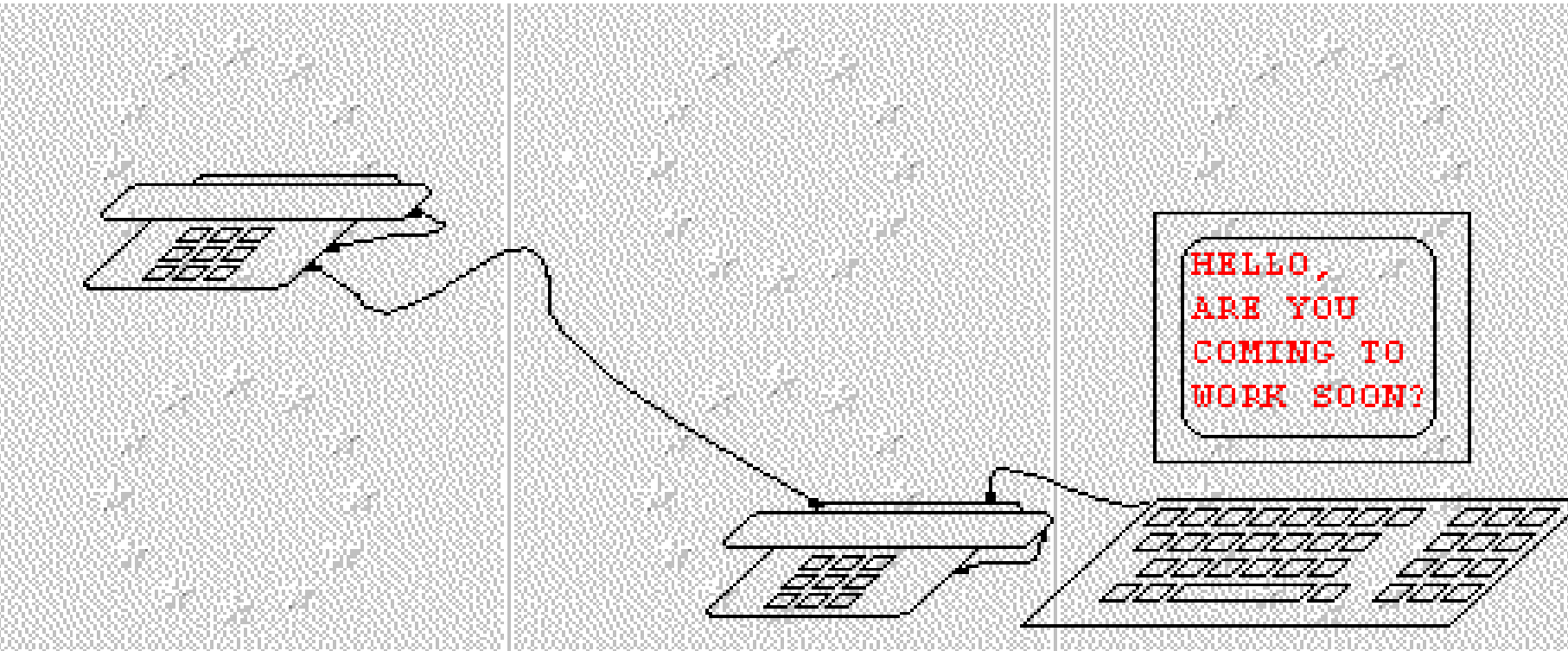
VOICE TO TEXT
Recognition

Video and audio
managing device or
program





Riconoscimento via telefono





***VOICE Accompanying Measure:
Giving a VOICE to the deaf, by developing awareness
of VOICE to text recognition capabilities***

◆ Objectives:

- develop prototypes of voice systems for the deaf
- demonstrate the prototypes to relevant organisations
- use a VOICE Forum on the Internet as a Project tool
- organise meetings / workshops using the prototypes

◆ Partners

- JRC-ISIS, Kepler University of Linz, SoftSol-FBL, ALFA, CECEOEV, IHSB

◆ Duration: 2 years (1998-2000)



Conferences, School or University



A slide is projected on the left screen by the speaker: the text generated by the speech recognition system is converted into subtitling lines and projected on the right wall-screen, under the speaker's image taken by a video-camera.





A deaf user communicates with a colleague: the text generated by the speech recognition system is converted into subtitling lines and overlaid onto the correspondent's video image.





The VOICE Project



Subtitled videoconference



voice@jrc.it
http://voice.jrc.it



- 100 workshops, 6000 participants, Web Site & Associations Forum
- Tests at schools
- Broadcasts RAI, RTBF, TV5, contacts TV Europe and Canada.
- Portable PC with glasses



Subtitled workshop



Development and harmonisation of subtitling in European television broadcasting

1/3 population: languages/communication difficulties

- ◆ living or travelling in other countries
(news, education, amusement)
- ◆ hearing impaired and elderly

focusing the aims and define the balance between technical and social aspects

- ◆ subtitles quantity: from 30%(?) to 100% of broadcasts
- ◆ quality: validation by (weak) user groups
- ◆ audience: lack of indicators on teletext pages' users
- ◆ style: differences in different countries
- ◆ DVD: uncertainty in a new area

- ◆ lack of awareness and co-ordination



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- ◆ There are technical solutions and pre-standards
 - work to be done to promote them at a European level
- ◆ Harmonisation as a *catalyst* to encourage the market
 - ensuring links to (or defences from) USA and Canada
 - >90% subtitled broadcasts USA/Can, 70% UK and Czech, 30% D, I,
 - *design for all*:
extending to all users the experience of specific users
- ◆ Increasing in television subtitling + DVD and Web
 - large distribution, translation easier by common formats
- ◆ Risk of missing an important opportunity
 - it is time for establishing a reference starting group
for TV, digital TV, DVD



Let's dream!

Voice

Let's pause a second...
Is this just a dream?

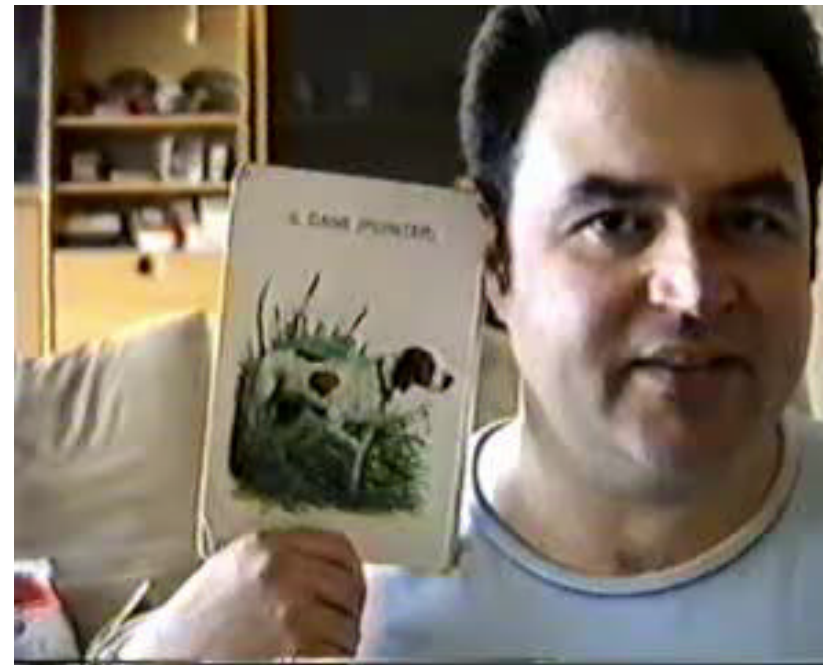




Automatic subtitling...



The most modern technological means 20 years ago





VOICE Project's demos





Video-telephone subtitling





Reality better than dreams





Multimedia

- television, digital television, digital radio, film/cinema
- video-cassettes, CD-ROM, DVD

Synchronisation

- on line: news, live broadcasts, sport
- off line: films, documentaries, games; time-code: in & out

Style

- open caption (visible for all users)
- closed caption (teletext page with subtitles)
- full text or resumed/simplified text
- number and position of lines: fixed or scrolling
- colours' schemas and characters' font and size

Users:

- normally hearing users: subtitles only of voice
- hearing impaired: subtitles of voice and of sounds (colours)
- audience: statistics on teletext pages' users; advertising

Tools: voice recognition, stenotype, manual keyboard

New tips: subtitles' indicator, sounds level meter, tele-command



Tables on <http://voice.jrc.it/tv>



A	B	C	D	E	F	G	H
Albania	RTVSH		Radiotelevizioni Shqiptar	http://rtsh			
Algeria	ENTV		Entreprise nationale de Télévision	http://www			
"	TDA		Télédiffusion d'Algérie				
Austria	ORF		Osterreichischer Rundfunk	http://www			home@o
Belarus	BTRC		Belaruskaja Tele-Radio Campanija	http://www			tyr@tvr.b
Belgium	VRT		Vlaamse Radio- en Televisieomroep	http://www	no	yes	info@vrt.
"	"	TV1	TV1	http://www	"	"	info@tv1.
"	"	KETNET/C	Ketnet	http://www	"	"	info@ket
"	"	"	Canvas	http://www	"	"	info@can
"	RTBF		Radio-Télévision Belge de la Communauté	http://www			mediation
Bosnia-	RTVBH		Radio Televizija Bosne i Hercegovine				-
Bulgaria	BNT		Balgarsko Nationalno Radio	http://www			http://www
"	BNT		Balgarska Nationalna Televizija				
Croatia	HRT		Hrvatska Radiotelevizija	http://www			hrt@hrt.hr
Cyprus	CY/CBC		Cyprus Broadcasting Corporation	http://www			rik@cybc.
Czech Republic	CR		Cesky Rozhlas	http://www			
"	CT		Ceská Televize	http://www			info@cze
Denmark	DR		Danmarks Radio	http://www			dr@dr.dk
"	DK/TV2		Tv2 / Danmark	http://tv2			
Egypt	ERTU		Egyptian Radio and Television Union				
Estonia	EE/ETV		Eesti Televisioon	http://www			etv@etv.
Finland	FI/MTV		Oy Yleisradio Ab	http://www			mtv@mtv.
"	YLE		Oy Yleisradio Ab	http://www			fbc@yle.fi
France	GRF		Groupement des radiodiffuseurs francais				
"	"	TF1	Télévision Française 1	http://www			telespec
"	"	FT	France Television	http://www			
"	"	FT2	France 2	http://www			contact@
"	"	FT3	France 3	http://www			
"	"	C+	Canal+	http://www			http://esp
"	E1		Europe 1	http://www			http://www
"	ARTE		ARTE	http://www			http://faq
"	ARTE		ARTE	http://www			



Different colors for different actors



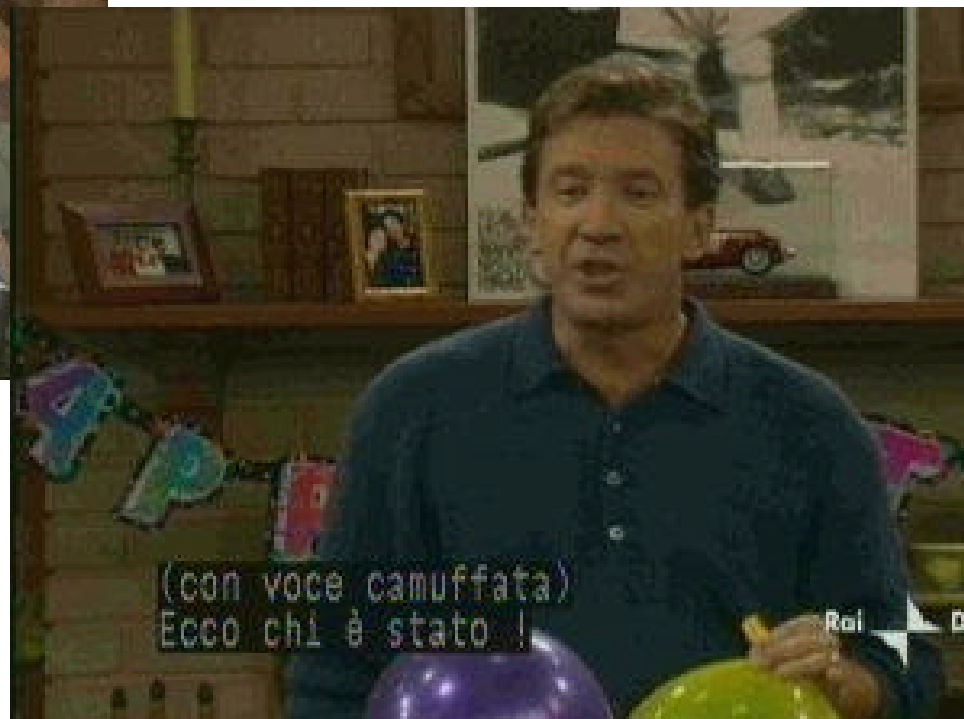


- Silent sequence in subtitled broadcast
- Fixed text in not subtitled broadcast





Voice tone - Music





Sounds' description





..continuation...

Voice





Positioning





- ◆ Subtitles' indicator
 - ◆ Remote control
 - ◆ Sounds level meter
 - ◆ Teletext audience measures/surveys
-
- ◆ Zapping (hearing):
 - ◆ > +1 (increase channel's number by 1)
 - ◆ Zapping (hearing impaired):
 - ◆ remove Teletext
 - ◆ insert Teletext (page 100)
 - ◆ goto 777
 - ◆ sorry 888
 - ◆ wait + doubts



Arrivederci

Voice

THANKS FOR YOUR ATTENTION !



*voice@jrc.
http://voice.jrc.*

THANKS FOR YOUR FUTURE COLLABORATION



Che fai tu, luna, in cielo ?
dimmi, che fai, silenziosa luna ?
Sorgi la sera, e vai,
contemplando i deserti.

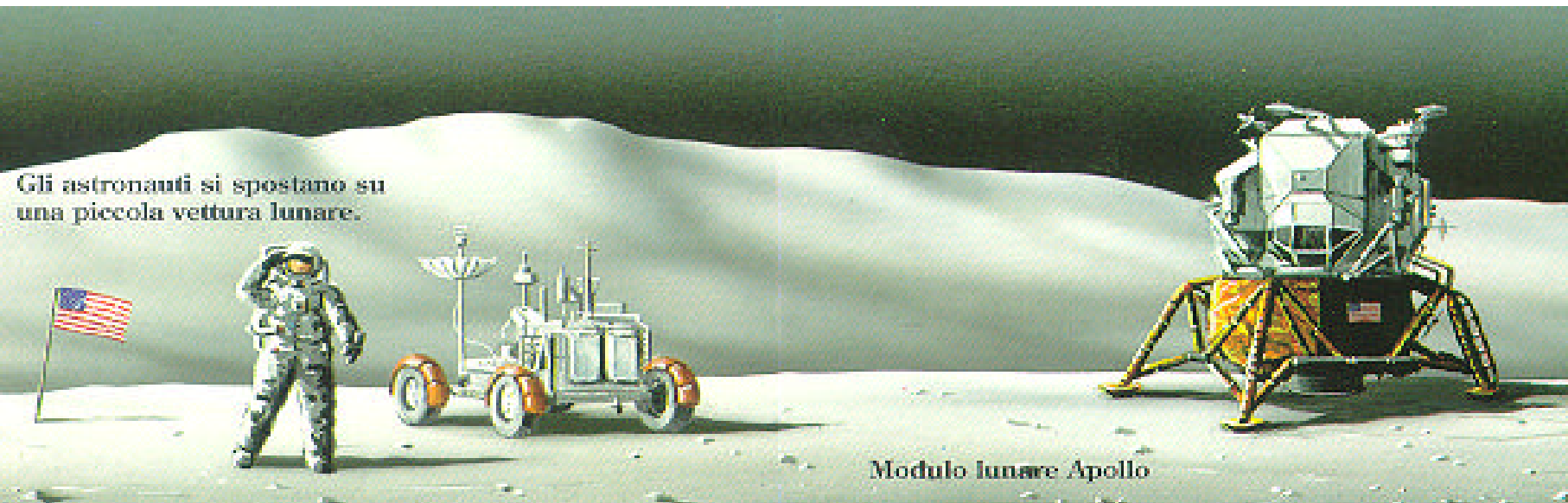
dal Canto notturno di un pastore
errante dell'Asia,
composto tra il 22 ottobre 1829 e il
9 aprile 1830,
pubblicato la prima volta nell'
edizione fiorentina del 1831.





Geografia spaziale

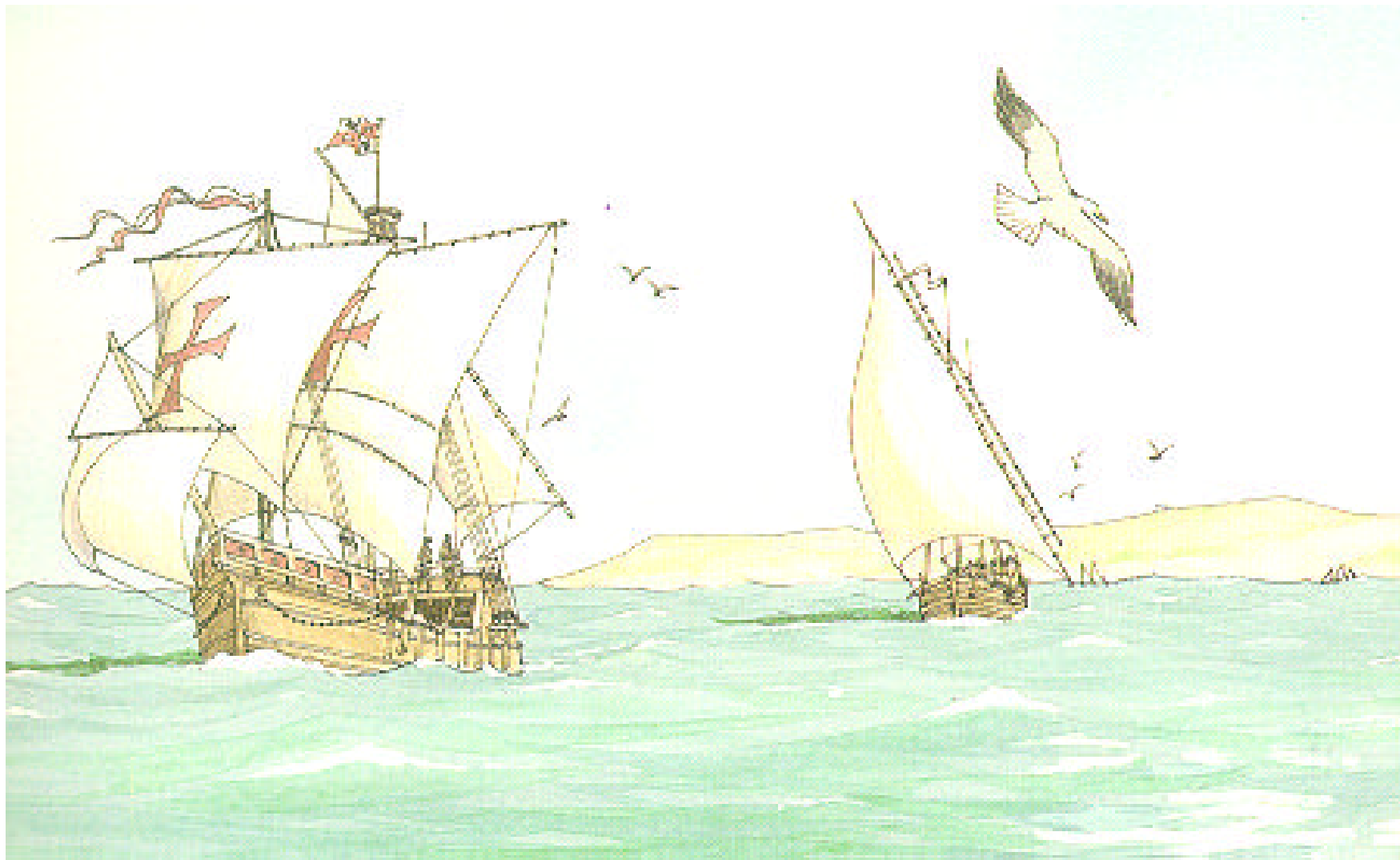
Voice





Navigando verso l'ignoto

Voice





The partners exchange
information via a
VOICE Forum on the
Internet and spread the
results and best
practices via a VOICE
Web Site:
<http://voice.jrc.it>

VOICE - Objectives [English] - Netscape
File Edit View Go Communicator Help

JOINT RESEARCH CENTRE
EUROPEAN COMMISSION

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Voice Logo

GIVING A VOICE TO THE DEAF
by developing awareness of
VOICE to text recognition capabilities

VOICE TEXT

A Voice To Text (VTT) subtitling system for or conferences, television transmissions and telephone calls.

VTT WITH SUBTITLES VTT WITH TELEPHONES

A system to create visual images corresponding to voice and sounds at home or on television.

VISUAL SOUNDS

Document Done

Siten ATTUALE - Microsoft Exploring - D:_Prel... slide - Message (Plan... Microsoft PowerPoint... Microsoft Word - Voic... VOICE - Objective... 12:37



Council Decision of 3 December 2001

on the European Year of People with Disabilities 2003

(h) to pay special attention to awareness of the right of children and young people with disabilities to equality in **education** so as to encourage and support their full **integration** in society ... in the education ..., in order to improve the integration of pupils and students with special needs in ordinary or specialised establishments

3. Other actions: ... Cooperation with broadcasting and media organisations as for using new tools allowing easier access to this information (such as **subtitling** for the hearing impaired and **image description** for the visually impaired)



*I disabili sono disAbili,
cioè diversamente Abili,
ostacolati nel dimostrare le loro Abilità.*

Notevoli capacità nei campi complementari a quelli della loro disabilità, perchè, in tali campi, la loro sensibilità e la loro capacità lavorativa sono notevoli.

Dallo spot TV RAI Segretariato Sociale per l'Anno 2003:
*Il nostro errore è quello di cercare negli altri
le qualità che non hanno,
trascurando di esaltare
quelle che realmente possiedono.*



- ◆ Italy is a significant example of **integration** of people with disability in the **school** system and in society: the **youth** see not only elderly people with disability, but also young school-mates with disability in the classroom, source of friendship with them and their families during the school period, often continued after it, in the adults' life and at work.
- ◆ This approach may also be considered as a very good **investment**, since it allows a real integration at work.
- ◆ Moreover, the pedagogic approach developed for the needs of pupils with disability are **extended to all** teachers for all students.



Redazione di un decalogo,
di 10 regole di base in 10 campi diversi:

- 1) incontro generico con un sordo,
- 2) ad uno sportello,
- 3) per una conferenza,
- 4) nella scuola ed universita'
- 5) per i gestori dei cinema,
- 6) per i registi degli spettacoli teatrali, per gli aspetti musicali,
- 7) per le reti televisive,
- 8) per i responsabili dei musei,
- 9) per i gestori degli alberghi,
- 10) per i sordi stessi.



Spesso la risoluzione dei problemi delle persone disabili porta a soluzioni migliori per tutti.

Anche i Siti Web, se riconsiderati e migliorati dal punto di vista delle persone con disabilità, sarebbero più fruibili da parte di tutti gli utenti.

- ◆ **ACCESSIBILITA' (WebAccessibility)**
concetto tecnico corrispondente al rispetto di regole codificate
- ◆ **FRUIBILITA' (Usability)**
Sito corrispondente alle aspettative dell'utente (disabile e non) in merito al facile e chiaro reperimento delle informazioni