



This presentation is part of the COGAIN Deliverable D3.4

Eye Control Hints and Tips

by

the Network of Excellence on

Communication by Gaze Interaction

www.cogain.org

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to hear the presentation)*



Making implementation a success: Access to mainstream software

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Metrovision R&D

User Requirements Analysis



- The EGCA should be an open system allowing the use of all functionalities of a multi-media computer.
- Every applications and functions of an application have to be accessible through the use of the pointing device
- The user has the right to use the applications he/she wants. From that point of view, the EGCA has to allow the use of any kind of application and functions without having to prepare or adapt them.

Emulating the mouse 1/2



- Need for very high accuracy

ex: button on toolbar at 45 cm \approx 0.5 degree of visual angle \approx 0.03 mm of resolution on the image of the eye

Limitation due to sensor capabilities but also due to physiological factors

Solutions ?

- « aiming » compensation
- local recalibration
- zooming factor

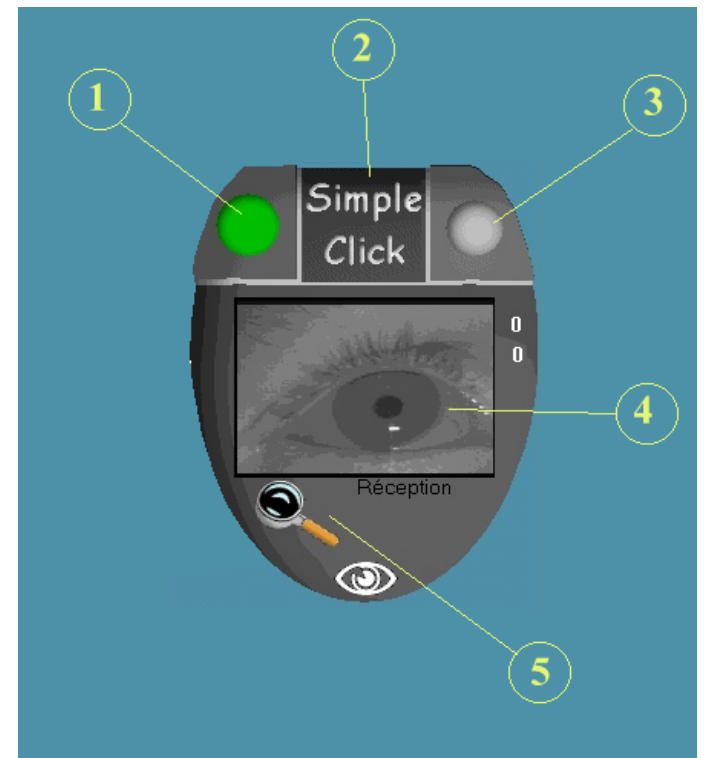
- Need for high sampling frequency

ex: a low sampling rate introduces a delay between the eye movement and the displacement of the cursor non compatible with a comfortable use of the computer. Comparing to a hand-driven mouse (100 ips), 30 samples per second seems to be a minimum

Emulating the mouse 2/2



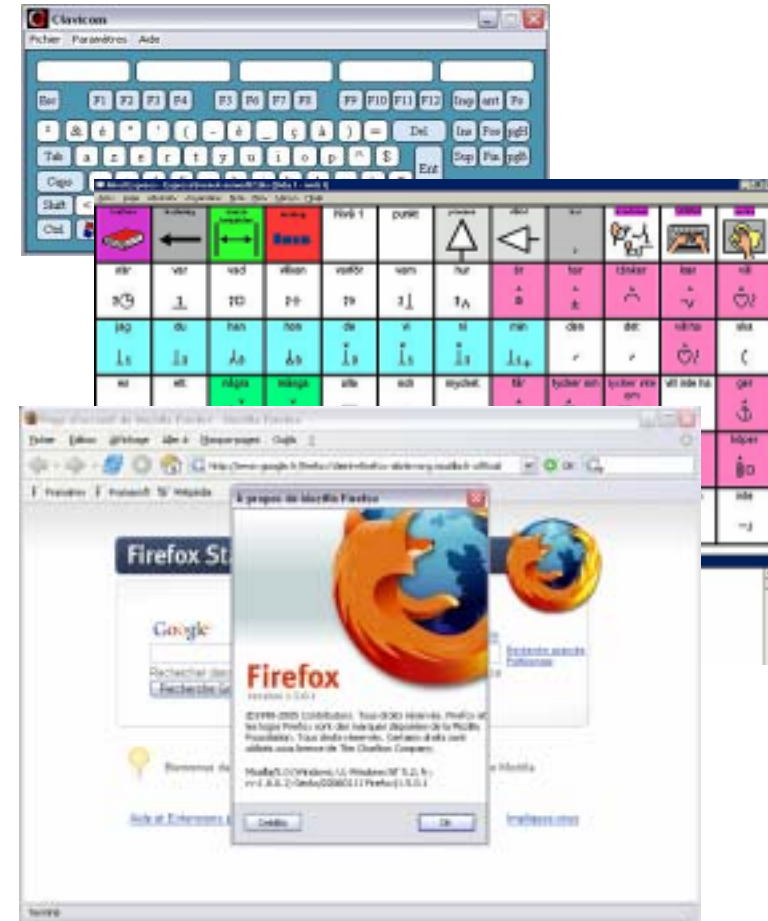
- Avoid the « Midas » touch problem
- Controlling the different functions of a standard mouse
- Provide solutions to deal with eye movements alterations



Applications that have been validated



- Onscreen keyboards :
DonnerLaParole, Wivik, Clavicom, The Grid, CVK, Mind Express, Keyvit, Qualikey.
- Microsoft :
pack Office, Internet Explorer, Outlook, MSN Messenger, Mediaplayer.
- Free alternatives :
OpenOffice, Firefox, Thunderbird, VLC, VisioPlayer.
- Specific tools:
Dasher, VNC, Qualiworld, RocketDock, DreamWeaver



Sébastien, Planning Manager, 28



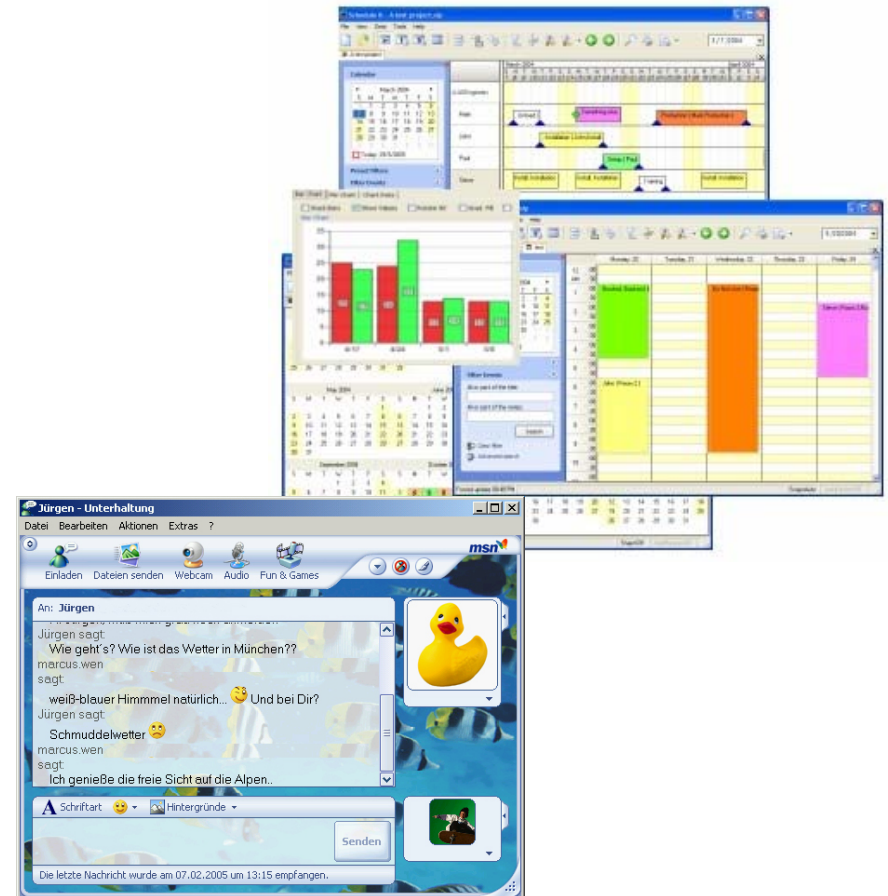
- Nearly complete tetraplegia, keeps for the moment autonomic breathing, voice and one thumb mobility.
- Amyotrophic Lateral Sclerosis: variable evolution
- Has a « contract » with his parents: they let him live alone in his own apartment as long as he is able to work.
- Was searching a « long-term » solution



Sébastien, Planning Manager, 28



- Has to use Excel and a specific intranet application developed by the company.
- Is an internet-fan : wants to browse, chat and more...
- Is a game-addict : plays several online games



Cédric, Website Designer, 30



- Complete tetraplegia, respiratory aid, unusable voice
- Was the first student in France to pass an exam with an eye-tracker : a degree in computer science (2002).
- Works from home as website designer first as freelance and now as employee



Cédric, Website Designer, 30



- Wants to use development tools:
 - *programmation languages,*
 - *compiler,*
 - *Debugger, ...*
- Wants to use standard web design tools:
 - *visual html editor,*
 - *flash creation program*
- Realized several web sites:
<http://cedric.druez.free.fr/>

	www.handigrafik.org Site d'Handigrafik Réalisation à partir de la charte graphique et mise à jour. Utilisation du CMS Joomla.
	www.actinieproductions.com Site officiel d'Actinie Productions Réalisation à partir de la charte graphique et mise à jour.
	www.web-asso.org/seheno Site officiel de la chanteuse Seheno Conception, réalisation et mise à jour.
	www.web-africa.org/asns Actions Solidaires Nord-Sud - Sénégal Conception, réalisation et mise à jour.

Serge, company creator and manager, 29



- After a severe accident on a motorcycle, complete tetraplegia and respiratory aid.
- Weak hope of recovery : a surgical intervention improved his breathing capabilities.
- Was wine waiter before his accident. Decided to face up and lives his love for the wine



Serge, company creator and manager, 29



- Motorcycle accident
- Brainstem trauma ⇒
Abnormal eye movements
- Diplopia due to defaults in
conjugated eye movements
- Nystagmus



Serge, company creator and manager, 29



- Created a web company to sell wine around the world: he is doing all the office work with an eye-tracker.
- Continues his writing activities, contributing to specialized and general press, for instance to the magazine « Elle ».

Vino Senso

La force des sens

NAVIGATION Accueil

Accueil

Qui est serge...

Une relation de confiance

Dégustation

La carte des vins

Bienvenue sur le site de la société Vino Senso

Fondée en 2006 par Serge Maloubier, sommelier de renom, Vino Senso propose aux professionnels et aux particuliers

- Une sélection de vins à la vente
- Des services sur mesure : Conseil, Evenementiels, Formation...

IDENTIFICATION

Vino Senso présente une originalité forte et concrète: elle a vocation à financer l'association Défi&Partage, reconnue d'intérêt général. **en savoir plus...**

Sélective et diversifiée, la carte de Vino Senso propose des vins qui révèlent le meilleur de chaque terroir. C'est l'assurance de n'avoir jamais de mauvaise surprise.

Attaché à l'idée que le vin est un produit de partage, Serge Maloubier a fait le choix de vins pouvant être consommé par le plus grand nombre: la majorité des bouteilles proposées ne dépasse pas 15€.

Nom d'utilisateur

Mot de passe

Se souvenir de moi

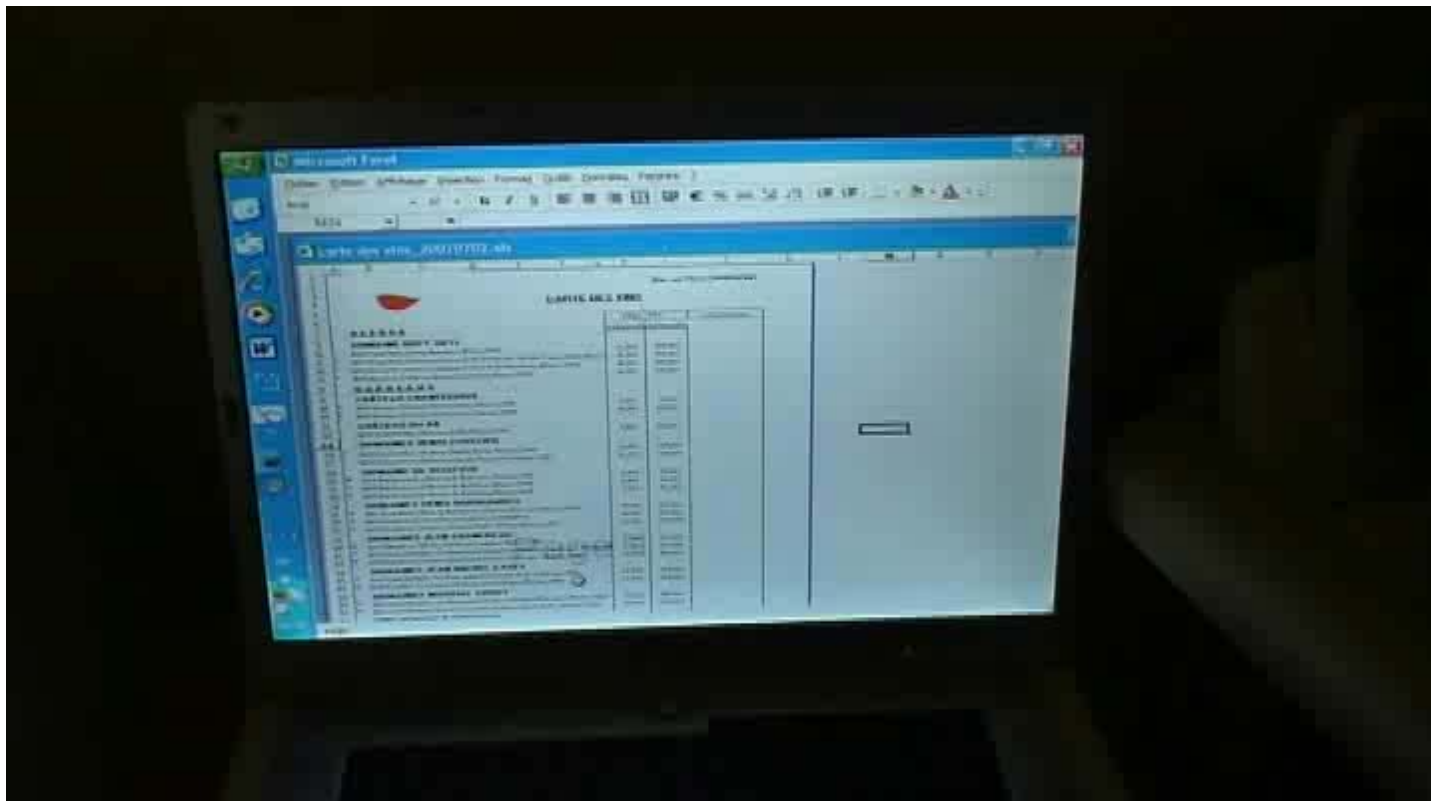
Se connecter

Mot de passe oublié ?
Pas encore de compte ?
Enregistrez-vous

Contact :

© 2007 www.vinosenso.com
un logiciel libre distribué sous licence GNU/GPL.

Serge, company creator and manager, 29



[Click here to play the video from web](#)

Serge, company creator and manager, 29



This study demonstrates the feasibility of a complete emulation of the mouse interface on EGCAs. Such an interface provides access to an enormous amount of applications readily available on standard PCs and avoids the cost of development and maintenance of specific applications to meet the demand of users.

For more information...



www.cogain.org