Mixed Media Grid (MiMeG)
Distinguishing features and functions

This document could be read in conjunction with the 'Choosing a CAQDAS Package Working Paper' which provides a more general commentary of common CAQDAS functionality. This document does not provide an exhaustive account of all the features and functions provided by MiMeG but is designed to highlight some of its distinguishing elements. The Comment section at the end details our opinions on certain aspects of functionality and usability.

__Important note:__ MiMeG is quite different from most of the other software packages reviewed here as it is the outcome of a completed research project rather than a commercial product and it is no longer being developed. Since the software is Open Source a sense of the research process and the issues encountered is included in this review. MiMeG is a methodologically innovative software which addresses collaborative requirements of working with video data which other CAQDAS tools do not address. It does not, however, include many of the coding tools which are the basis of most CAQDAS packages and therefore this review is not directly comparable with the others in this series. MiMeG is freely downloadable and although technical support is limited, the developer is interested to get feedback from users. See our Comments at the end of this review for more information on potential implications of using MiMeG.

Background   http://www.ncess.ac.uk/research/video/mimeg/

MiMeg is the result of a UK National Centre for E-Social Science (NCeSS) funded interdisciplinary collaboration between the Public Computing Research Group in the Computer Science and Education departments at the University of Bristol, and the Work, Interaction and Technology Group at King's College London, UK. ■ The first version of MiMeG was released in 2006 under an open source GPL license. This was followed in 2007 with the current version. ■ Funding ended in 2008 and though further funds are being sought, the software currently is no longer being developed and technical support is limited. ■ The MiMeG project focussed on developing tools to enable the analysis of mixed media materials collaboratively.

Minimum System Specifications (recommended by developer)

32-bit MS Windows (NT/2000/XP)
OS X Mac

Philosophical underpinnings of MiMeG

MiMeG (Mixed Media Grid) provides synchronous and asynchronous support for mixed media qualitative analysis enabling geographically dispersed research teams to watch, discuss and annotate video data collaboratively. ■ Underlying the development of MiMeG and its predecessor VidGrid http://www.cs.bris.ac.uk/~fraser/projects/vidgrid/ were two key observations; firstly that existing software which handles audio-visual data most frequently focuses on textual data and requires the existence of written transcriptions; and secondly that tools supporting real-time analytic collaboration were generally weak.   ■ Development focused around the concept of collaborative 'distributed data sessions' at which researchers watched video data together, developed transcriptions and conducted analyses in teams. Observations of such research sessions were used to scope the focus of the software, revealing that co-present interactions are incredibly rich social and analytic situations which are neglected in both software applications and within relevant social-science literature. ■ The main focus of the resultant software is thus on creating a collaborative space rather than analytic tools. Its development was intended to supplement rather than replace face-to-face research meetings.
See Tutt et al. 2007 for more information on the background of MiMeG's development.

Structure of work and project management in MiMeG

MiMeG can be run as a standalone application but it is designed to be run over a server. ■ It is not possible to create copies of MiMeG projects, although additional clients can be invited to partake in subsequent runs and screen capture software can be used to create a copy which could then be viewed away from MiMeG, but would no longer be editable. ■ The interface or 'task space' shows windows for video and other media (e.g. written transcripts, images etc.), playback controls, annotation controls. The task space can be viewed on a computer monitor or projected onto a wall. (see Figure 1).

Data types and format in MiMeG

MiMeG handles a wide variety of video and textual data formats. At the point of its latest release (2007), it could handle all known video formats and textual formats such as text only (.txt), MS Word files (.doc) and PDF format (.pdf).

Ethical Considerations and Data Sharing in MiMeG

In developing MiMeG, key concerns were the practical and ethical aspects of sharing video data which is a key concern for many researchers interested in non-verbal communication who often video vulnerable groups such as children or patients. ■ As well as the ethical issues of showing such data beyond the research team and the potential insecurity with streaming video, are issues around 'real' informed consent when the technical aspects of securing data on servers can be very difficult to explain to research participants. Such ethical issues framed the infrastructure of MiMeG's development. ■ The first release was structured such that video data was stored locally and that only the annotations (see below) were shared across a server. This model avoids the need to stream video data in real-time and therefore reduces ethical issues concerning the storing and sharing of data using servers. In many ways this emulates how multi-disciplinary analysis teams often work in co-present situations when a particular researcher has generated the video and therefore has 'ownership' of it. ■ Copying and transmitting data to diverse locations, however, would still require security procedures, but these issues are the same whether using MiMeG or not. ■ Development for subsequent versions included a security framework to enable a more flexible approach to secure data sharing in the research environment.
For more information on security and data sharing aspects of MiMeG see Fraser et al 2006 and Shaukat & Fraser 2007.

Collaboration tools in MiMeG

MiMeG connects distributed researchers via the medium of the video and through audio conferencing provided by a plug in to the free software Skype.

Playback and Synchronisation tools in MiMeG

Versatile playback tools are provided to enable repeated playback of video fragments. ■ Control of playback tools resides at the 'master site' although control can be passed between sites (only one site can have control at any given point). ■ Different media files can be temporally synchronised with one another within MiMeG and played back simultaneously. Although there is no transcription tool within MiMeG, a written transcript which includes embedded timecodes can be imported and synchronised with the corresponding video file. Multiple textual files can be synchronised with one another or with the same video file, thus enabling different types of transcription of the same media file to be viewed separately or concurrently. ■ Text files can be shared with all clients, or then can be kept locally.

Annotation tools in VidGrid and MiMeG

Work conducted in developing the concept tool VidGrid enabled researchers to scribble freeform visual annotations over a video image in real time using a mouse or pen input and for researchers in different physical locations to see these annotations appear on the image. ■ Projecting the image and using an ultrasonic pen based input system such as a Mimio pen is particularly useful when more than one researcher is present in any one location. ■ It is possible to scribble on a still frame, for example when the video is paused in the appropriate place, or to do so whilst the video is running, in real time. ■ The persistence of the scribbles (i.e. how long they last when the video is being played) is determined when the annotation is created. There is no default length of time that scribbles persist as the appropriate length of time will vary according to each individual annotation or scribble. ■ Any client logged into the data session can create an annotation, and these will appear in different colours. Annotations can be saved during a data session, or discarded as appropriate.
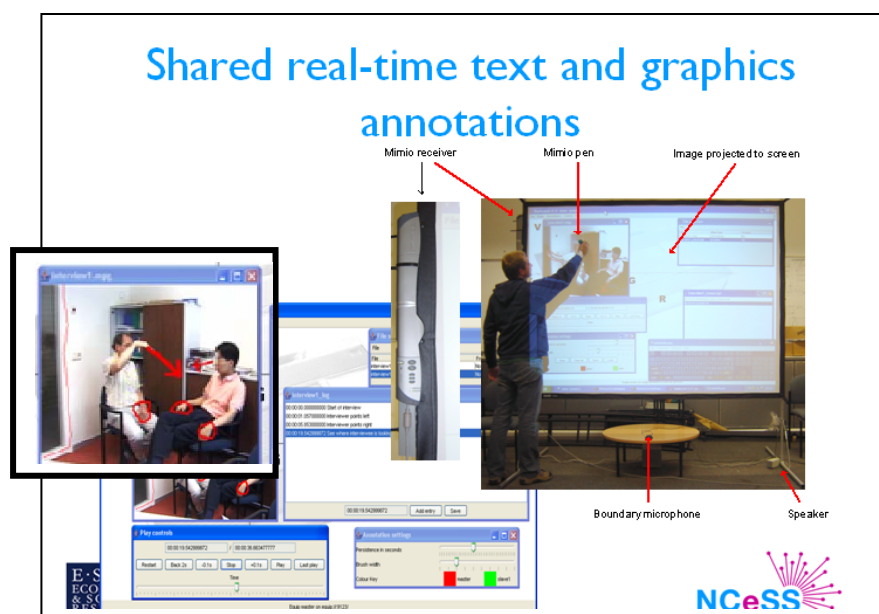

Figure 1. Viewing (remotely) annotations made team members at another site

Synchronous Annotations in MiMeG

MiMeG further built on this work but started from the position that these scribbled annotations are not flexible enough to effectively emulate co-present data sessions. With VidGrid, although both sites could see the annotation, it was not possible for the researchers to see one another, but non-verbal gesturing and other communicative interactions are key elements of effective co-present interaction when analysing audio-visual data in teams. VidGrid could be run alongside audio communication tools such as Skype, but being able to hear one another was not enough.

From a technical point of view, the issue was around the time-based nature of the media, such that it takes researchers in the remote location a split-second to see the annotation being made, by which time, the action being annotated had changed or ended. Scribbling as developed in VidGrid did not enable the observed action to be temporally coincided with the annotation and the ability of the remote researchers to view the action and its annotation. This resulted from VidGrid only being able to display the annotation itself, rather than visualising the anticipation or trajectory of it.

The second release of MiMeG developed a solution to this problem by enabling the sharing of annotations over a server. Metadata generated when creating annotations in the different

locations is committed into a database which is shared across the server, whilst the video data itself remains locally held. The use of electronic Mimio 'smart' pens as illustrated in Figure 2 add to the effectiveness and reaction time of the eye in picking up 'remote' annotations
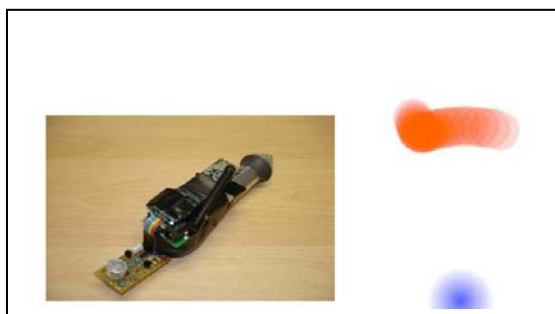

Figure 2. Use of Electronic pen devices

CAQDAS Networking Project comment on MiMeG

It is not possible to make direct comparisons with the other software packages reviewed in this series as MiMeG starts from a very different methodological position.

Rather than attempting to provide analytic tools for qualitative data, MiMeG focused on developing collaborative tools for working with video data in geographically dispersed teams.

It is not possible to merge MiMeG projects, although this is not required as the software is designed for different collaborative purposes.

There is no built-in ability to see the other research group(s) through video-conferencing type technology.

The development and inclusion of the Mimio smart pen significantly enhanced the annotation aspects of the software.

The increase of collaborative projects using video data and the fact that the software is free to some extent offsets doubtless concerns about the lack of current funded support. An experiment with MiMeG requires only the investment of time to potentially enhance the video-sharing and communication experience.

Further Reading
• Fraser, M., Hindmarsh, J., Best, K., Heath, C., Biegel, G., Greenhalgh, C. and Reeves, S., Remote Collaboration over Video Data: Towards Real-Time e-Social Science, in *Computer Supported Cooperative Work, special issue on Collaboration in e-Research*, M. Jirotka, R. Procter, T. Rodden and G. Bowker (eds.), 15 (4), pp. 257-279, Kluwer, 2006
• Shaukat, M. and Fraser, M. (2007), A Security Framework for Data Distribution in Qualitative Analysis Tools: Digital Rights Management in MiMeG, in *Proc. ICeSS 2007*, Ann Arbor, Michigan, USA
• Tutt, D., Hindmarsh, J., Shaukat, M. and Fraser, M., The Distributed Work of Local Action: Interaction amongst virtually collocated research teams, in *Proc. ECSCW 2007*, pp. 199-218, Kluwer