

eReview White Paper

eReview™ Overview

The Internet is evolving from a static information repository to an interactive communications vehicle. Companies are realizing the need to enhance their communication and collaboration capabilities, both in-house and with other organizations. They are looking at Web and Internet-based technologies to help them communicate and interact with their colleagues, partners, customers and other target audiences. They see that creating vibrant, interactive, online communities offers benefits that translate to a richer online experience for the user.

Combining a simple way to hold meetings and share documents live, over the Internet, with the ability to view and annotate documents, drawings, and CAD files in over 150 formats, eReview provides one of the first true collaborative view and markup solutions in the industry. Many products claim to offer “collaboration”, but eReview is the first product of its kind to deliver real-time online collaboration and conferencing integrated with document review.

eReview makes it possible for companies to conduct online conferences where several participants can retrieve, view and annotate documents and drawings anywhere, anytime, on any computer, in a real-time online collaborative environment. The virtual visual meetings allow geographically dispersed team members to collaborate on design decisions, engineering change order (ECO) management or any other activity that requires that all attendees view the same set of documents or drawings and share their ideas. eReview is equipped with textual chat to facilitate interaction and conversation. It also has a conferencing option that supports both real-time audio and video amongst attendees. The chairperson or the conductor of the meeting can control the attendee’s privileges to view or annotate a document. He can also allow the attendees to roam asynchronously through a set of review documents and then synchronize all attendees to view crucial comments or annotations from a team member. eReview enables selective markups or redacting, so during an on-line meeting, some parts of a document can be blocked out from certain attendees. eReview also supports textual as well as graphical markup whispering among the attendees.

The Evolution of View and Markup Technology

View and markup (redline) technology has been around for quite awhile. Early versions were DOS based or UNIX based. Most of today’s versions are Microsoft Windows based with easy-to-use graphical interfaces capable of viewing a variety of file formats including raster, office, vector, CAD, as well as formats like Postscript, PDF, ZIP, etc. They are stand-alone desktop-based products that can view files from the local disk or networked file systems. Some products, like Allegria’s ForReview, come Internet enabled, allowing users to enter a URL and retrieve files across the Internet for view and markup.

There is a major shift occurring in the workplace paradigm. The world is moving to the Internet and thin-client technology is rapidly gaining acceptance. It is becoming much more cost-effective to run mission critical applications from a server, requiring only an Internet browser on the desktop. The availability of applications accessed through the Internet effectively eliminates the need to install, manage, update and support desktop versions across many, potentially thousands, of Personal Computers and provides these applications from anywhere at anytime.

Users of view and markup applications are quickly embracing this paradigm. There are several technologies being used to implement it. Let us focus on Internet Computing Architecture (ICA) and Java applets, the two most widely used technologies. ICA technology will Web-enable essentially any Windows-based desktop application. The desktop application resides on a server and anyone with a browser can run the application on the desktop. The primary advantage of this technology is the immediate availability of full functionality of the desktop product (fat client) from the browser. Because the user is already trained on the desktop version, no additional training is required.

The other principle technology that is being used to provide view and markup functionality is based on Java. Many companies are rewriting their Microsoft Windows based view and markup applications as Java Applets. Although these applets provide the view and markup functionality, they are not collaborative. Yet in today's evolving world, collaboration has become essential.

Why Real-Time Collaborative View and Markup?

So what is really required in today's market? First, let us understand why view and markup products exist and why the view and markup process is essentially a collaborative process even though these products have traditionally been stand-alone desktop products.

In the recent past, engineers worked in centralized design teams, where individuals working on the same project sat in adjacent cubicles, or perhaps down the hall. Likewise, manufacturing, marketing, purchasing, etc. were typically close by. Designers and other team members could easily meet with one another to compare notes, share information, iron out problems and coordinate activities. However, in today's globally distributed product development environment, a company's various divisions and groups are often located around the world. To complicate matters further, critical aspects of product development such as analysis and manufacturing are now typically separated from the design group and are increasingly outsourced. It is not unusual for a company and its partners to be many time zones apart.

The benefits of the traditional style of collaboration that once occurred in hallways or in offices amongst engineers are sorely missed as the demands of time-to-market and the increasing pressure to cut development costs are complicated by greater fragmentation of

the product development process. And while e-mail, fax, and voicemail are valuable components of the newer office environment, all make poor substitutes for simultaneous real-time collaboration.

Today's view and markup solutions all claim to be collaborative but what they really provide is only a sequential view and markup process. Typically, electronic documents are routed by means of a workflow process to reviewers who view them at the desktop, add comments, and send the comments back to the designer. This is repeated in an iterative cycle until all changes have been processed, agreed upon, and the next revision of the document is released. This method may take quite some time and the process really involves very little personal collaboration. Many companies do not know how to implement even this simple view and markup process.

Yet as designs become more complex and innovative products become more important in overcrowded markets, the added value of true collaboration has become critical. When teams can easily share ideas and information and work together in collaborative sessions, the right people make better decisions in a fraction of the time and information about these decisions is immediately available. Therefore, a true real-time collaborative Web-based view and markup solution provides a competitive advantage to its users. Decisions made in an interactive, real-time environment using a combination of stand-alone and collaborative processes will result in better and faster knowledge dissemination.

Why eReview?

All global corporations will migrate to Web-based collaborative "Engineering Review Meeting" processes that encompass not only their entire organization but also the members of their demand and supply chains. For large engineering and manufacturing industries, Web-based meetings need to include the ability to view scanned and other raster images, vector formats, postscript and PDF, printer outputs, office documents (WORD, EXCEL, ACCESS etc), CAD 2D and 3D drawings and eventually 3D models. The ability to redline and annotate all kinds of documents is a must. Redacting or hiding confidential data from selected participants of the meeting, such as a supplier or a vendor, is also required. Integration with other CAD, EDM/PDM, ERP/MRP and other engineering analysis/design software and backend databases over the web is equally important. Web-based view & markup products should operate in 3 modes: 1) standalone – when only view & markup is required by a single user; 2) collaborative – when team based view & markup is required; and, 3) roaming – a combination of standalone and collaborative – used in a team environment where team members can view & markup documents privately and then share in a collaborative fashion their comments and markups.

eReview has been developed to meet these requirements. It provides the foundation technology for engineering Internet, intranet and extranet portals as well as collaborative communication. eReview is targeted towards the collaborative product commerce (CPC) and engineering and manufacturing B2B markets.

How it works

Since eReview is based on Java and is a client/server-based solution, it works in Netscape Navigator and Internet Explorer on both Windows and Unix platforms. eReview provides impressive performance in a thin applet, offering more features than most Java based products. And because it is truly Web-based, there is no fat-client for the user to download. It operates in an Internet, intranet or extranet environment, without compromising firewall security. It is truly firewall friendly. ForReview users will recognize the powerful, yet intuitive, viewing and annotation tools from ForReview, a leading desktop view and markup solution. Annotations (markups) can be shared between the desktop (ForReview) and server-based (eReview) solutions.

eReview is the first Java based viewer to provide a true Multiple Document Interface (MDI). Users can open multiple documents or drawings in separate windows, then work with each window individually. Users can also execute such advanced features as *side-by-side compare* of documents or using an Overview or Bird's Eye Window for zooming and/or panning.

A Java Application Programming Interface (API) is provided to facilitate integrations into legacy document management systems, knowledge management, ERP, ASP, Portals, supply chain and project management Web-centric solutions. Several out-of-the-box integrations to popular document management systems, like WebWorks™, e-Matrix™, and Documentum™, are currently available.

Moreover, as the product evolves and new versions are released, the server is updated, providing the client with the latest innovations. No changes are ever required on the client side, reducing the administration headache of distributing and supporting desktop software solutions to zero.

Who is it for?

eReview is ideally suited for medium to large engineering/manufacturing companies who are implementing Web-based document management, EDM/PDM, ERP, Workflow, etc. and who require a collaborative environment. It is extremely useful for helping an organization to extend its reach to on-line real time collaboration in its Design and Supply Chain. It is no longer necessary for the supplier or contractor to have the application that created the document. The only requirement is a Web browser. In many cases, a company may find that using a combination of complementary desktop and Web-based viewing and markup products, such as ForReview and eReview, provides an optimal solution.

Document Management providers should look at eReview as a means of extending the power of their systems to include collaborative document and drawing review and markup as well as providing a powerful but simple solution that allows their users to hold on-line meetings.

eReview will extend the capabilities of any .com company by providing a collaborative environment for its users.

Competition

There are several products currently in the market that may compete with eReview. Products can be classified into two groups: Java based view and markup products, and Web-based collaborative products. Other Java based view and markup products provide a set of view and markup features similar to eReview but do not provide any of the collaborative capabilities. Several of them are based on Java applets that have some of the limitations as mentioned earlier in the paper. Among them is an OCX application that runs in the browser, based on another technology similar to ICA technology.

Other competitor types are collaboration products. There are a few 3D collaborative products available that do not compete directly with eReview since they address the high-end mechanical CAD marketplace. WebEx (a Web-based service) and NetMeeting (point-to-point) provide application sharing and collaboration, and are not designed to be document review systems. The strengths of eReview over these products are fourfold; (1) eReview is the only collaborative product to support both audio and video collaboration as well as standard chat; (2) eReview is packaged as a product that is not only available through Web4engineers.com but is also available as a product that can be integrated into proprietary company intranet sites, document management systems, etc.; (3) eReview views documents without launching any application at the client machine, while some competitive products create the viewable on the client machine through software installed on the client machine; and, (4) no other product today effectively addresses the issues of conducting a virtual review meeting.

Conclusion

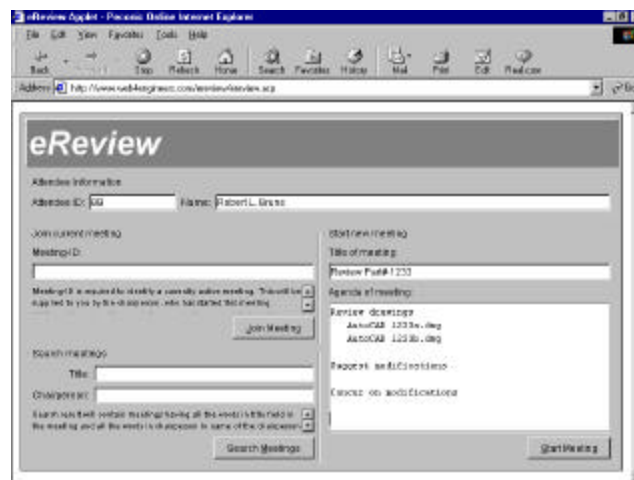
Business today is competitive on a global scale. To be successful, companies need to focus on reducing development times, improving internal processes, thus saving time and money. Many new methodologies are being employed to achieve the desired levels of success -from small focused project teams, to outsourcing, to using resources scattered around the globe. The backbone that helps make this all possible is the Internet and the glue that can help tie it all together is the ability for everybody to do document collaboration on-line in real-time using this backbone. eReview is the product that can help companies meet their goals.

For those companies that want to take advantage of the Internet/Intranet and have need only for view and markup in a non-collaborative environment, eReview is available in a single-user version.

eReview Feature Summary

Initiating Collaboration/Web Meetings

To hold a meeting and share and markup documents in real time, the Chairperson initiates a meeting and invites others to join.



Start new meeting:

- ?? The person starting a meeting is called the Chairperson (CP).
- ?? Attendee Information: Enter information in the Attendee ID and Name fields. Attendee ID can be any alpha/numeric string the user selects.
- ?? Enter a title for the meeting in the Title of meeting field. Provide information in the Agenda of Meeting field (optional).
- ?? Click on Start Meeting.

Join current meeting:

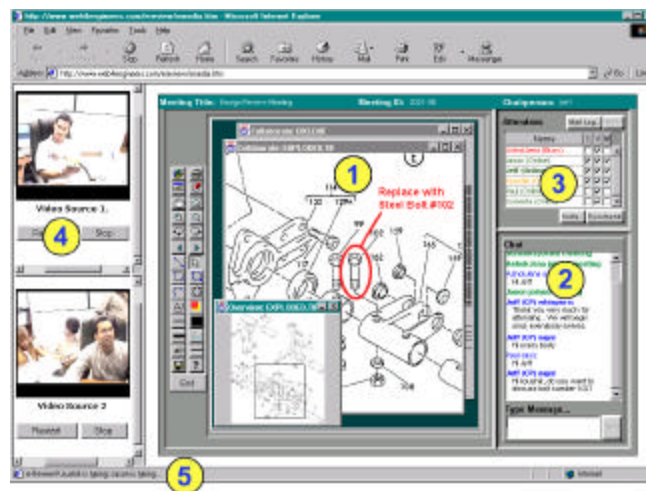
- ?? Join a current meeting by providing the meeting ID or by searching for the meeting by Title and/or Chairperson fields.
- ?? Enter the meeting-ID. To be able to join a current meeting, the person inviting you must provide you with a meeting ID.
- ?? Click on Join Meeting.

Search meetings to join:

- ?? Enter search criteria in the Title and/or Chairperson fields.
- ?? Click on Search Meetings.
- ?? If only one meeting matches the search criteria, you will be directly connected to that meeting.
- ?? Wait until the eReview viewer interface appears on screen.

The eReview Meeting

The eReview Meeting Screen is opened and displays five sections: (1) the Viewer section where multiple drawings can be viewed and marked up, (2) the Chat section, used for textual communication with other attendees, (3) the Control section where the Chairperson controls the meeting, invites others to attend, assigns privileges to others, and has access to the eReview Document Vault, (4) an Optional voice/video section, and (5) Attendee Action/Status section.



Inviting others to join a meeting after the meeting has begun:

- ?? The chairperson can invite others to join the meeting or remind others that they should be attending the meeting.
- ?? Click on Invite
- ?? An email form will appear. Enter your email address and the email address of the person to attend, then click on Send.
- ?? An email containing a direct URL link to the meeting is sent to the invitee. The person just clicks on the URL Link and is entered into the meeting.

Assigning Privileges to Attendees in a meeting:

- ?? The chairperson can enable privileges for attendees by clicking the appropriate boxes for each attendee.

?? Enable/disable attendees privileges including Control, View and Modify Annotation rights by clicking on appropriate box.

Using Chat:

?? Chat with attendees of the meeting by entering text into the Type Message box and then clicking on Send. The message is broadcast to all attendees and appears in the Chat window.

?? To selectively chat with certain attendees, a feature known as "Whispering" is available. To enable whispering, highlight the attendee(s) to whom you would like to whisper by just clicking on their names. As long as attendee names are highlighted, any further messages typed by you will be received by only the selected attendees. To go back to the normal mode; i.e., include all attendees, control click on the highlighted attendee names to set back to normal (un-highlighted).

Attendee Action/Status:

?? At the bottom of the Viewer section is an Attendee Action/Status bar. In this area, status about each attendee is displayed and updated as each attendee performs actions. It will indicate who is typing, creating a markup, modifying a markup, etc.

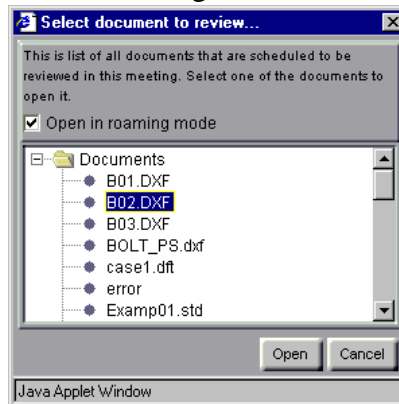
?? The next line details the status of attendees, indicating who is coming on-line, inactive, experiencing network problems, busy, etc.

?? A separate Action log containing the above information is created and saved.

The eReview Document Vault

Each user of eReview has access to an assigned amount of file cabinet space on the eReview server – the configuration is determined by the company. Members control their own vault area and can upload documents to their vault for storage or for their meetings. Everybody in attendance can view from the Chairperson’s meeting vault. Note that eReview can also be tightly integrated with all popular document management vaults (systems).

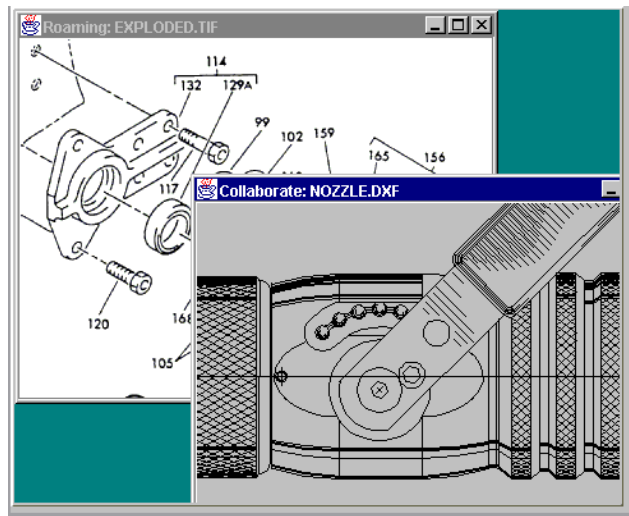
The following shows how a user opens and selects a document from a set of documents scheduled to be reviewed in the current meeting.



It is important to note that users can open documents in 'roaming' or 'collaborative' (default) mode. If opened in collaborative mode, the document will appear on all attendees desktop and based on privileges, each user can either view or markup the document in a team collaborative manner. If opened in roaming mode, the document is local to the user who opened it. The user can view and markup the document and when ready to share the information with all attendees, he/she can request that the chairperson put that document into collaborative mode. Once the document is put into collaborative mode, it appears on all of the attendees' screens, allowing the user to share his comments/markups with the team.

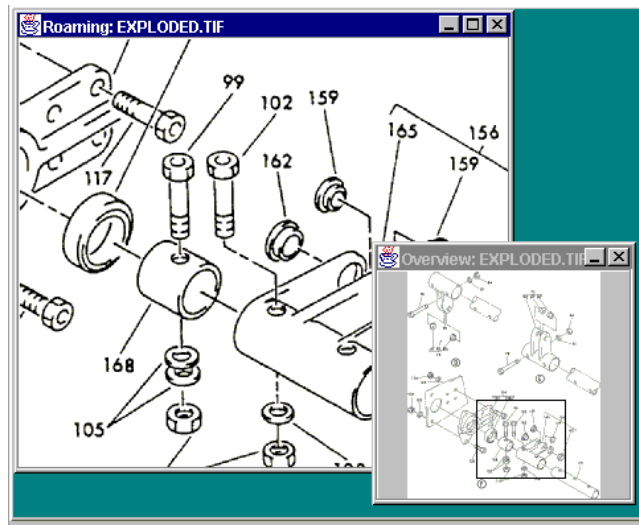
eReview MDI Interface

eReview is the first Java applet product that supports a true Multiple Document Interface. This allows the user to simultaneously open as many documents as required for the review session. Normal review sessions are based on reviewing multiple documents including drawings, Word docs, and other miscellaneous types of files. With an MDI interface, the reviewers (team members) can be viewing a set of documents. The following example demonstrates multiple documents opened in eReview.



As can be seen in this example, there are 2 open files. For example, the team may be reviewing Nozzle.dxf collaboratively. The other drawing, Exploded.tif, is opened in roaming mode, so the user can be examining something important in this drawing that he may want to share with other team members during the meeting.

One other feature that is provided based on eReview's MDI capability is an Overview Window. This is a navigational tool that allows either zooming or panning around a drawing. The Overview Window contains a movable, scalable Shadow Box that defines the contents of what is being displayed in the main drawing window.



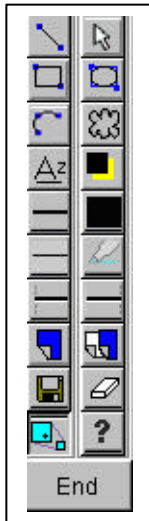
Note the Shadow Box in the Overview Window above that defines what is being displayed in the main Window.

View and Print Section: Toolbar Buttons



- ?? Open URL Picture: Open required drawings from eReview.
- ?? Print the current view.
- ?? Open URL Markup: Load existing markup files.
- ?? Reset: Reset drawing to original.
- ?? Hand Pan: Pan the drawing
 - ?? Hand Zoom: Select the button to zoom into a specific portion of the drawing. The cursor on the drawing now looks like a magnifying glass. Use this to define a region of the drawing that you would like to zoom into. The selected region is now displayed.
- ?? ZoomIn & ZoomOut: Zoom in /Zoom out drawing
- ?? Rotate Counter Clockwise & Rotate Clockwise: Use these buttons to rotate the drawing
- ?? Previous Page & Next Page: Switch to the previous/next page or view of the drawing.

Markup Section: Toolbar buttons



- ?? Line, Polyline Markup Object
- ?? Select Markup Object
- ?? Square, Rectangle Markup Object
- ?? Circle, Ellipse Markup Object
- ?? Arc Markup Object
- ?? Cloud Markup Object
- ?? Text Markup Object
- ?? Markup Foreground/Background Color Select
- ?? Markup Line Style Select: Solid, dash, different dash patterns
- ?? Markup Polygon Fill Pattern Select: Solid, hatch, crosshatch, others
- ?? Markup Line Width Select: List provided.
- ?? Markup Mode Select: Opaque, transparent, highlight, or erase mode
- ?? Markup Line Style Begin Type Select: Different Line beginners
- ?? Markup Line Style Terminator Type Select: Different Line terminators
- ?? Create New Markup Layer
- ?? List all Markup Files/Layers
- ?? Save Markup Button saves the current markup file
- ?? Refresh Screen
- ?? Create Overview Window
- ?? Help about box
- ?? END –terminate current meeting

Requirements

Client:

Browser: Microsoft Internet Explorer 4.0, or later. Netscape Navigator 4.5, or later.

Operating System: Windows 95, 98, NT 4.0, or later. Sun Solaris 2.6, or later.

JAVA 1.3 Virtual Machine (standard part of the browser)

Server:

Operating System: Windows NT 4.0, or later.

Processor: Pentium III recommended.

Hard drive: 20 MB Install. 50MB or more for temporary files.
RAM: 128 MB or more recommended

Modes:

1. Stand-alone
2. Conference
3. Conference with Audio
4. Conference with Audio/Video

File Format Support

Raster – GIF, JPEG, BMP, TIFF, CALS, GP4, etc.

Office Documents – Word, Excel, PDF, Postscript, Text

Vector – DWG/DXF, HPGL

Coming soon – CGM, DGN, ME10, All other ForReview supported formats are supported by using ForReview as a server connected to eReview.

How do I try eReview!

Go to Web4engineers.com. Click on Register button in the upper left and obtain both a User Id and Password. Now click on the Login button and enter Web4engineers.com. Once logged in, click on the My Web4engineers button on the upper right hand side. Before you click on My eReview button on the bottom, insure that you have the correct Java run-time environment installed on your desktop. If you have any problems, please contact Allegria Software, Inc at (714) 974-2500 and ask for a support person.