Elluminate’s Building Block for Blackboard Learning Management System™

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The Need for Synchronous Voice Interaction

For many educational institutions, the majority of distance courses use online asynchronous tools, possibly in conjunction with synchronous text chat or streaming video. With asynchronous distance education programs, students often experience a feeling of isolation. Throughout their program, students have to work mostly on their own, with little contact with other students and teachers. This isolation can be a serious detriment to learning in many. Studies indicate that interactions between students and teachers as well as student-to-student interaction greatly enhance distance education by improving student attitudes and motivation, increase completion of coursework, better performance on tests, and greater retention. Moreover, the increased interaction provides a sense of community to the students.

Research in distance learning continues to emphasize the importance of interaction for effective learning and teaching. Historically, technologies that increase interaction have been expensive, difficult to use and not often utilized. With the advances of technology and the ubiquitous nature of the Internet, distance learning is changing. It is now easy and cost-effective to incorporate interactive instruction using a new model of distributed learning that combines asynchronous online learning with online synchronous solutions.

Synchronous collaboration software, such as virtual classrooms, allow for real-time interaction with students and teachers. A model, which combines both asynchronous and synchronous learning to bridge students, teachers, and educational content in vibrant online learning communities, is the ideal solution. The desired outcome of using these synchronous communication tools is to add value of real-time interaction rather than just static content.

Synchronous interaction has many benefits to students and teachers, including the following:
- Immediate feedback to the students from teachers.
- Replicates the physical classroom model
- Reduces the feeling of isolation
- Provides a forum where students can collaborate at any time
- Fosters a sense of community with the learners
- Is best for students who have trouble structuring their time and therefore provides motivation to the students
- Excitement about a new technology which increases their technical aptitude

Even programs that have used synchronous models have not often used Voice as part of the learning model. Often this is because teleconferencing all the students and instructors together is troublesome and quite expensive. However, new solutions feature built in Voice Over Internet (VOIP), which does away with the need for a telephone – you can interact with students completely over an Internet connected computer equipped with a microphone and speakers (or headset). This added voice component provides:
- Increased human interaction improves results
- Increased meaning and understanding through a user’s tone of voice
- Increased sense of “community”
- Effective and efficient communication vehicle
- Flexibility in responding and interacting
- Multiple methods to interact with students with differing learning styles

In all levels of education, the trend for distance learning programs is to provide a blended approach, which combines synchronous and asynchronous experiences in an attempt to maximize on the benefits of both models.
Elluminate Live® Overview

Elluminate Live! is the interactive, live eLearning and web conferencing tool that...

- Adds live interaction to distance learning
- Improves student performance, including those with special needs
- Promotes real understanding and active learning
- Offers high return on investment in a short period of time
- Ensures a superior user experience, regardless of connection speed

With Elluminate Live!, you can add live eLearning to your asynchronous distance education programs, with opportunities for real-time discussion and dynamic interaction between teachers and students. Only Elluminate Live! offers an affordable instruction delivery solution that enables you to duplicate any learning environment, from lectures and debates to small group discussions and presentations. With Elluminate Live!, you can attract and retain qualified teachers, leverage limited teaching resources, and enable real-time tutoring and mentoring. Your teachers can offer virtual office hours for students. And you can even increase the efficiency and effectiveness of your faculty and staff meetings.

Elluminate Live! is a virtual classroom and Web conferencing tool built specifically for live, multimedia collaboration. With Elluminate Live!, meeting is more productive, teaching more effective, and learning more enjoyable. So you can take your online education to the next level. And increase your reach and your enrollment — domestically and internationally. Elluminate Live! is powerful enough to reach hundreds of users simultaneously — across town or around the world. And it works with multiple platforms. So you can enhance the learning opportunities for your students, wherever they are located. You can even develop online communities and add online events, such as workshops, seminars, and conferences.

Unlike the Internet, Elluminate Live! is built specifically for live, multi-media collaboration. Our unique Collaborative Communications Framework (CCF) automatically ensures that everything is in the right place at the right time. Whether you have a dial-up modem or a high-speed LAN, you get the same superior quality, high performance, and dependability—with no lag time or garbled communication. So you can focus on content, not technology.

Elluminate’s CCF creates a collaboration environment which can deal with the inherent unpredictability of the Internet. Rather than depending on the browser for bandwidth management, CCF optimizes a data stream specifically for the connection speed of each individual user, whether someone comes in on a 28.8K modem or a high speed LAN. This is unique to Elluminate. The advantage is that our audio is crystal clear, thus doing away with the need for telephone conferencing, and all users see and hear the same thing at the same time. This synchronization provides the teacher with the peace of mind that everybody else is in sync with what they are presenting – thus creating a far better user experience than the constant “can you see it yet” questioning that can go on.

http://www.elluminate.com
1-866-388-8674
Elluminate Live! Academic Edition Overview

Add live eLearning to your asynchronous distance education programs, with opportunities for real-time discussion and dynamic interaction. Only Elluminate Live! Academic Edition offers an affordable instruction delivery solution that easily duplicates any learning activity—from lectures and presentations to small group discussions and debates.

Elluminate Live! is powerful but flexible, providing a customized online experience for every participant. Reach hundreds of participants simultaneously—across campus or around the world. So you can enhance learning opportunities for all participants, while increasing your reach and your enrollment. Elluminate Live! also allows you to add virtual or blended online/onsite events, like workshops, seminars, and conferences, and develop online communities that facilitate social networking.

What's more, Elluminate Live! can also help you create the classroom of tomorrow—today. Expand the boundaries of your physical classroom with remote guest speakers, connect participants from other classrooms for combined lessons, and record content for participants who miss a class or need help preparing for exams. Present from a tablet PC, load a presentation template in the whiteboard, engage today's “digital generation” who are used to multitasking, and much more.

With Elluminate Live! you can attract and retain qualified instructors and leverage limited teaching resources. Your instructors can offer virtual office hours for participants and enable real-time tutoring and mentoring. Provide professional development to teachers and administrative staff without costly travel or teleconferencing. And you can increase the efficiency and effectiveness of your faculty and staff meetings.

Superior User Experience

Elluminate Live! is built specifically for live, multi-media, many-to-many collaboration. Our unique Collaborative Communications Framework (CCF) automatically ensures that all participants are in sync, whether they have a dial-up modem or high-speed LAN, PC or Mac. Our No User Left Behind technology means ALL participants, even those with disabilities or those in remote rural areas or third-world countries where Internet connectivity is less than optimal, get a richer, more interactive learning experience, with no time lag or garbled communication. So they can focus on content, not technology.

Our CCF creates a collaboration environment that deals with the inherent unpredictability of the Internet. Rather than depending on the browser for bandwidth management, the CCF optimizes a data stream specifically for the connection speed of each individual user, whether a participant has a 28.8K modem or a high speed LAN. This is unique to Elluminate. As a result, the audio is crystal clear, eliminating the need for telephone conferencing, and all participants see and hear the same thing at the same time. This synchronization ensures the moderator that all participants are in sync with what is presented, creating a far better user experience than the constant “can you see it yet” questioning inherent with other solutions.
Along with full cross-platform support and all-bandwidth connectivity, Elluminate Live! is also designed to enable users with disabilities to fully participate. We support the Americans with Disabilities Act (ADA), are complaint with Section 508 of the Rehabilitation Act, and conform to the World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI). Elluminate Live! accessibility features include multiple streams of closed captioning, enlarged video, auditory event notification, short-cut and hot keys, ability to set platform colors, screen reader access, and more.

The modular nature of CCF also allows us to incorporate new functionality as needed with appropriate bandwidth management and prioritization. That means we are ready for the future and, as customers demand additional features, we can deliver.

### Elluminate Live! Academic Edition Features

<table>
<thead>
<tr>
<th>Superior Technical Foundation</th>
<th>Collaborate in real time, regardless of Internet connection speed, with everyone seeing and hearing the same thing at the same time.</th>
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</thead>
<tbody>
<tr>
<td>Full Duplex Voice Over the Internet</td>
<td>Participants and moderators speak to each other using full duplex audio through standard microphone connected to the computer. State-of-the-art technology delivers incredibly clear and crisp audio—on bandwidths as low as 28.8Kbps. Sessions can be configured to allow up to 4 attendees to speak simultaneously, perfect for speaker panels or small group discussions. Phone bridge is available if required, enabling session to be 100% voice over the Internet, 100% teleconference, or mixed.</td>
</tr>
<tr>
<td>Shared Interactive Whiteboard</td>
<td>Proprietary, shared whiteboard features easy-to-use and flexible tools for writing, drawing, and erasing. The whiteboard enables you to:</td>
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<tr>
<td></td>
<td>- Have private and backup slides (sub-slides)</td>
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<td></td>
<td>- Collaborate on multiple whiteboard screens</td>
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<td></td>
<td>- Resize/insert/re-arrange whiteboard screens</td>
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<tr>
<td></td>
<td>- Edit/group/align/resize/layer objects</td>
</tr>
<tr>
<td></td>
<td>- Access a customizable library of presentation symbols and clip art</td>
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<tr>
<td></td>
<td>- Save (as PDF) and print any screen, if permission is granted by moderator</td>
</tr>
<tr>
<td>Application Sharing</td>
<td>Share applications, desktop, or region of desktop with others for hands-on training and demonstrations. Hosts have visual indicators of the content they are sharing. Easy-to-use menus and buttons allow hosts to take snapshots of the content for markup and share applications that run full screen while still managing interaction.</td>
</tr>
<tr>
<td>Live Webcam Video</td>
<td>Show live video in four different modes based on quality or frame ration. Give video privilege to one or more selected participants or all participants.</td>
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<tr>
<td>Remote Control</td>
<td>Give control of applications or desktop to others, enabling true hands-on training and support. Allows users to take control automatically or by entering a password.</td>
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## Breakout Rooms
Create breakout rooms that contain private audio and content (whiteboards, app sharing, etc.). Moderators can freely and easily move themselves and participants between rooms. Participants can be randomly assigned into breakout rooms and returned to the same rooms at any time.

## Virtual Labs
Create a virtual lab environment where participants can independently work on applications. Ability to send keystroke combinations to remote machine allows users to seamlessly control a remote computer and its applications.

## Quiz Manager
Moderators can deliver quizzes or surveys from within Elluminate Live! creating questions in advance or on the fly. Participants respond and submit their answers. Results can be displayed to all (in graphical format) or kept private.

## Direct Messaging
Participants and moderators can communicate using variety of messaging capabilities, including private messaging between moderator and participant, one-to-one messaging between participants, and one-to-many messaging between moderator and participants. Direct message areas can be resized as can the font in each area.

## Graphing Calculator
Participants can plot one or two graphs and find their points of intersection and x- and y-intercepts. Use privately or share, with viewing controlled by the moderator.

## Content Development

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>PowerPoint Import</strong></td>
<td>Load PowerPoint files onto whiteboard automatically with single mouse click. Presentations can be loaded onto the whiteboard at any screen size.</td>
</tr>
<tr>
<td><strong>Additional Content Import</strong></td>
<td>In addition to PowerPoint presentations, load OpenOffice and StarOffice presentations and PDF files onto the whiteboard. Users can also load images in various file formats, including BMP, JPEG, PNG, GIF, and TIFF. Animated GIFs can also be loaded.</td>
</tr>
<tr>
<td><strong>AppSnap™</strong></td>
<td>Capture screen shot from any application or your desktop and show it on whiteboard—another quick and easy way to build content for your sessions.</td>
</tr>
<tr>
<td><strong>Multimedia Content Delivery</strong></td>
<td>Play multimedia files, such as QuickTime movies, and load in library. Monitor download to participants and initiate playback.</td>
</tr>
<tr>
<td><strong>Synchronized Web Browsing</strong></td>
<td>Push participants to multiple URLs via embedded windows. Allow participants to interact independently with content in fully functional windows. Redirect participants to any link—all at the same time.</td>
</tr>
</tbody>
</table>
## File Transfer
Transfer files within the Elluminate Live! session to distribute documents, assignments, and handouts. Give privileges to participants to transfer files. When loading files, all users can be prompted to save the file, or files can be transferred silently and saved by those who need the file.

## Interactive Recordings
Record live sessions for later play back for participants who missed a session or want a review. Build a library of live sessions, or create personalized content to be used asynchronously. Playing back recordings is just like being there—every bit of audio, every highlight; every shared application is recorded, and played back in perfect synchronization. Recordings are interactive, allowing users to save slides, text messages, and profiles. Easy-to-use controls allow viewers to pause, forward, rewind, or navigate to a certain location in the recording.

## Math Symbol Library
Library of commonly used mathematical symbols is accessible by all participants. Customized symbols and images can also be added to library.

## Management and Usability

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td><strong>Moderator Control</strong></td>
<td>All participants can see who is speaking, typing a message, or using the whiteboard. Yet all communication within session is controlled and monitored by moderator.</td>
</tr>
<tr>
<td><strong>Individual Bandwidth Management</strong></td>
<td>Rather than depending on browser for bandwidth management, Elluminate Live! optimizes data stream specifically for connection speed of each individual. Whether participant uses a 28.8K modem or fast speed LAN, everyone sees and hears the same thing at the same time.</td>
</tr>
<tr>
<td><strong>Real-Time Session Awareness (Moderator ESP)</strong></td>
<td>Moderator knows whether participants are seeing what they should. When application sharing or displaying whiteboard content, moderator knows if participants are experiencing Internet delays and can adjust their presentation accordingly, with minimal disruption.</td>
</tr>
<tr>
<td><strong>User Profiles</strong></td>
<td>Attendees can enter their profile displaying picture and contact information. Moderators decide who can view profiles: no one, only moderators, or everyone in the session. Allows others to save profiles as a vCard and send an email from within the session.</td>
</tr>
<tr>
<td><strong>Polling</strong></td>
<td>Poll participants with yes/no, true/false, or multiple-choice questions, and visually monitor responses, privately or publicly. Participants can provide feedback to moderator on pace of session. The results are tabulated and can be kept private or graphically displayed to all participants.</td>
</tr>
<tr>
<td><strong>Emoticons</strong></td>
<td>Participants can express themselves to moderator and other participants with emotion indicators.</td>
</tr>
</tbody>
</table>
### Close a Session
Moderator can prevent additional participants from joining the session.

### "Stepped Out" Indicator
Participants and moderators can let others know they had to step away from their computer temporarily.

### New User Notification
Moderators can receive an auditory and visual notification when a new user enters the room.

### Audible Hand Raise Notification
Moderators can decide if they wish to have an audible notification when users raise their hands.

### Track Whiteboards and Content
Moderators have full session awareness with whiteboard content. Moderators can associate all objects on a whiteboard with each participant. When participants are allowed to navigate through slides, moderators can track which whiteboard screen each participant is viewing and ensure participants are on-track with assignments.

### Language Translations
Whiteboard and text chat automatically adapt to the language settings of the operating system for any language. Display menus and dialogs are available in English, Spanish, and French and automatically inherit language settings of operating system.

### Accessibility

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<tr>
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<tbody>
<tr>
<td>Closed Captioning</td>
<td>Moderator determines which participant(s) can view or provide closed captions. Use multiple streams for multiple languages or to create blogs of the session.</td>
</tr>
<tr>
<td>Color Settings</td>
<td>Automatically use desktop color setting, such as high contrast, in the Elluminate Live! interface.</td>
</tr>
<tr>
<td>Direct Messaging</td>
<td>Resize font and store default for easier readability.</td>
</tr>
<tr>
<td>Short-cut and Hot Keys</td>
<td>Activate menus, buttons, and dialogs with short-cut keys, including hand-raise, polling, and emoticons. Hot keys include activating audio, transiting video, and terminating application sharing.</td>
</tr>
<tr>
<td>Screen Readers</td>
<td>Provide verbal cues in Elluminate Live! interface via Java Accessibility Bridge to screen readers, such as JAWS and Narrator.</td>
</tr>
</tbody>
</table>

### Manageability

<table>
<thead>
<tr>
<th>Feature</th>
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<tbody>
<tr>
<td>Multi-platform Compatibility</td>
<td>In addition to Windows, Elluminate Live! runs on MacOS, Linux (Novell SUSE, Red Hat), and Solaris.</td>
</tr>
<tr>
<td>Server Software or ASP Service</td>
<td>Choose between server software installed behind your firewall or an ASP service accessible from anywhere.</td>
</tr>
<tr>
<td>Extensive Bandwidth Management</td>
<td>Extensive bandwidth management provides total control over the Elluminate Live! network footprint with ability to rate limit or cap the amount of bandwidth to be used.</td>
</tr>
</tbody>
</table>
### Automatic Reconnect

If Internet connection is temporarily lost, Elluminate Live! automatically reconnects and the user does not lose any content and is quickly synchronized with the rest of the participants.

### SSL Communications

Elluminate Live! can be configured to use fully encrypted communications (SSL).

### Minimum System Requirements

**Server Requirements (100 Concurrent Users)**

- Windows 2000 or 2003 Server, Mac OS X 10.4, Solaris 9/10 (SPARC or x86), RedHat Enterprise Linux v4 for x86, Novell SUSE Linux Enterprise Server (SLES9)
- 1.2 GHz Pentium 3 (Windows, Linux, or Solaris), 2 GHz G5 (Mac OS X and Mac OS X Server), 750 MHz UltraSPARC II (Solaris)
- 512 MB of RAM
- Static IP address with 4 Mbps outbound bandwidth.
- 400 MB of free disk space.

**Windows Client**

- Windows 98/ME/2000/XP
- Pentium III 500 MHz processor
- 128 MB RAM (98/ME) 256 MB RAM (2000/XP)

**Mac Client**

- Mac OS 9.2, Mac OS X 10.2.8/10.3.9/10.4
- G3, G4, G5, or Intel processor
- 128 MB RAM (OS 9.x), 256 MB RAM (OS X)

**Solaris Client**

- Solaris 9/10 (SPARC only)
- UltraSPARC llc 300 MHz
- 128 MB RAM

**Red Hat Linux Client**

- RHEL 4
- Pentium III 1 GHz processor
- 256 MB RAM

**Novell SUSE Linux Client**

- SLES9
- Pentium III 1 GHz processor
- 256 MB RAM

**In addition, all clients require:**

- 20 MB free disk space
- Soundcard with speakers and microphone or headset
- 28.8 kbps Internet connection
Adding Synchronous Interaction with Elluminate’s Building Block

Building Blocks® is Blackboard’s open architecture initiative. Elluminate has produced a Building Block to launch a synchronous session using Elluminate Live! directly from the Blackboard Learning System. The Elluminate Building Block allows users of the Blackboard Learning System 6.0 or higher, to create and launch Elluminate Live! sessions or recordings.

In order to create the Building Block, an SDK (Software Development Kit) containing Java APIs and documentation was provided by Blackboard. This allowed Elluminate to interface with the Blackboard platform. In addition to the APIs, Elluminate also took advantage of the Blackboard tag libraries to create a Building Block with the same look and feel as Blackboard to appear seamlessly integrated with Blackboard.

Elluminate Building Block features include:
• Classroom creation by teachers and teaching assistants
• Display list & modify scheduled classrooms
• Launch of a classroom by all (teachers / teaching assistants / students)
• Ability to customize the username that appears in the Elluminate Live! session
• Ability for teachers to record session
• Playback of recorded sessions by all (teachers / teaching assistants / students)

The system interfaces include the following:
• Blackboard 6 Learning Management System or higher – this is the application purchased and installed by an academic institute.
• Elluminate Live! – this is the application service that allows collaboration in a classroom type environment. This may or may not be on the same server as Blackboard. Also, the Elluminate Live! Server can be installed on our servers or hosted by Elluminate.
Integration from the System Administrator Level

Elluminate’s Building Block can easily be installed into the Learning Management System using the link “Manage System Extensions” from the System Admin panel and then clicking on “Install System Extensions”.

The Elluminate Building Block is provided as standard Blackboard extension file, which loads all of the necessary files and utilities. The System Administrator needs to indicate which server and port to use.

- The Elluminate Live! and Blackboard servers must be either in the same domain or within trusted domains
- Firewalls specifically to the Elluminate Live! server must allow traffic to and from the Blackboard system
- The Elluminate Live! server must have sufficient storage capacity for the anticipated volume of recordings

The software interfaces are

- API to the Elluminate Live! Manager Services for the management of the Elluminate Live! server
- The Blackboard System will provide authentication of users for the various roles and will be the front end for all user interaction
- The Blackboard System database will be configured with all necessary data for supporting the functions of the Building Block
- Sessions launched and played back will all be hosted from the Elluminate Live! server
Integration from Teacher and Teaching Assistant Level

For each course, a teacher or teaching assistant is able to create, join and record Elluminate Live! sessions and make these available to all students registered in that course. There are several entry points with the Elluminate Building Block and they are summarized here.

From the Control Panel, the teacher will see the link Elluminate Live! in the Course Tools section which allows them to view and create sessions.

Elluminate Live! sessions are created linking on Create Elluminate Live! Session. To create a session, the teacher or teaching assistant must complete a form to define the moderator’s name (the teacher or a teaching assistant), the session name and the start / end time. Sessions can be for a short duration (for specific course content) or over an extended period of time (for virtual offices and open meeting rooms).
The teacher is able to view the current and future sessions that are available to the students. To join a current session, the teacher simply clicks on the name of the session. Elluminate Live! will launch and the teacher will join the room with instructor status. Once the teacher joins the room, they can decide when to start the recorder.

Live sessions can be edited and deleted as necessary. The teacher is also able to view all recorded session and delete those.

Another entry point to the Elluminate Building Block is from the Communication tab. Here, the teacher / teaching assistant is able to view all current and future Elluminate Live! sessions in any course they are teaching.

To join a session, the teacher simply clicks on the session name and this launches them into the Elluminate Live! session. The teacher’s Blackboard user id is authenticated and passed to the Elluminate Live! server prior to letting the user join the session. The required software can also be downloaded and installed by clicking on Elluminate Live! Software Support.
Integration at the Student Level

Students can access Elluminate Live! sessions and recordings from the Communication tab available in the course.

To join a live session or view a recording, the student simply clicks on the session name and the Elluminate Live! virtual classroom will launch. The student’s Blackboard user id is authenticated and passed to the Elluminate Live! server prior to letting the user join the session.

Students can also download the required software and access several help files from the link “Elluminate Live! Software Support”.

Company Information

Elluminate, Inc. provides proven, best-in-class solutions for real-time online learning and collaboration. Elluminate delivers exceptional outcomes that enhance the learning experience, and increase retention and completion rates with lower Total Cost of Ownership and higher ROI. Elluminate features high-quality VoIP, robust interactive functionality for participants and moderators, and unique No User Left Behind technology — regardless of platform or Internet connection speed. Elluminate has won several prestigious industry awards, including Network Computing magazine’s Editor’s Choice for Web Conferencing software, and is rated by Forrester Research’s as a “Strong Performer” in Web Conferencing. Headquartered in Calgary, Alberta, Canada and Fort Lauderdale, Fla., Elluminate is the trusted choice of prominent corporations and academic institutions such as ADP, the University of Calgary, DeVry University, Georgia State University, Johns Hopkins University, PA Department of Education, Sun Microsystems, T-Mobile, and many more

For more information, please email us at info@elluminate.com or visit us on the web at www.elluminate.com. You may also contact Elluminate by phone at 1-866-388-8674 (Outside the US/Canada, please call 1-954-229-2622).