An EPIC Enhanced Meeting Environment

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ABSTRACT
ePic is an integrated presentation authoring and playback system that makes it easy to use a wide range of devices installed in one or multiple multimedia venues.

Categories and Subject Descriptors
H.4.3 [Communication Applications]: Computer conferencing, teleconferencing, and videoconferencing. H.5.1 [Multimedia Information Systems]: Video, Audio input/output; Artificial, augmented, and virtual realities; H.5.2 [User Interfaces]: Interaction styles, User-centered design, Graphic User interfaces (GUI), Prototyping; H.5.3 [Group and Organization Interfaces]: Computer-supported cooperative work, Collaborative computing.

General Terms
Management, Documentation, Design, Experimentation.

Keywords
Computer assisted presentation authoring, multimedia venues, presentation authoring, rich media presentation, device control.

1. INTRODUCTION
With more media devices available in a meeting environment, presenters have more choices for conveying information to others. For example, a presenter can use the primary display to show a statement, while using another display to show a supporting figure or video.

Many popular authoring tools, such as PowerPoint and Director [1], are excellent for creating units of media (e.g. slides) to be rendered on a single display, but provide no support for authoring and presenting across multiple devices. Even though ConferenceXP can handle multiple devices during presentation, this software distributes the same content to all displays for audience members, and does not support distribution of different contents to various devices [2]. These facts hinder presenters from using additional devices for presentation enhancement or tele-presentation. To encourage fuller utilization of media rich environments, we designed a presentation authoring and replaying

tool, named EPIC, to facilitate presentation preparation and playback for arbitrary device configurations]. EPIC is complementary to tools used for authoring specific media. It can organize media units prepared for simple devices and synchronously present coherent media units in one or more multimedia venues. In our prototype, various configurations of displays, printers, speakers and lights are supported.
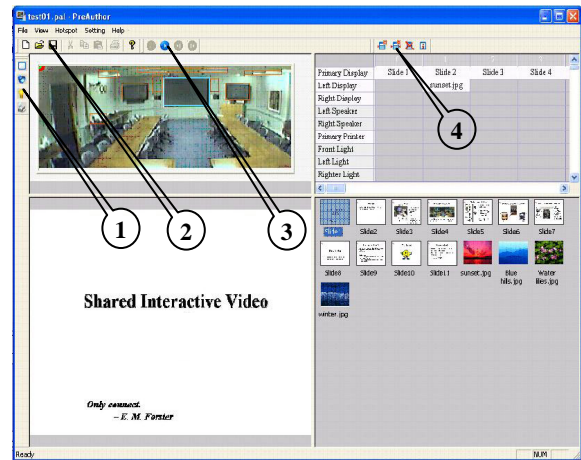
2. VIDEO SCENARIO

Figure 1. Main User Interface of EPIC (a)Top-left: A environmental image/video canvas depicts the device configuration of a venue. (b)Top-right: A device-state table reveals hyper-slides' relations for a unified presentation. (c)Bottom-left: A zoom pane for checking details of a user's selection. (d)Bottom-right: A hyper-slide pool shows thumbnails of all hyper-slides.

We demonstrate the EPIC system through a usage scenario. In this video, Qiong has to give a presentation in a different city. Since he cannot travel to that city, Qiong asked his colleague Frank to give that presentation for him. To ensure Qiong's PPT file can be properly displayed in an upgraded venue, Frank goes to the venue after he copies the PPT file to a proper directory.

When Frank finds a presentation console on the presentation computer, he feels curious to the function it has. He then tried the system according to simple instructions displayed on the console. After knowing some basic features of EPIC, Frank connects to an EPIC website to learn more about this software. Then he asked Qiong to give the presentation by himself using EPIC.

3. EPIC DETAILS

EPIC, which stands for Environment Picking Image Canvas, uses GUIs depicting the presentation environment. With these GUIs, a user can easily refer to presentation devices for the authoring purpose. Additionally, EPIC supports previewing a presentation playback in a virtual environment, an augmented reality environment, or the real environment.

3.1 Understanding the UI

Figure 1 illustrates the EPIC GUI, which includes an environmental image/video canvas for device references, a hyper-slide pool, a zoom pane for checking details of a user's selection, and a playlist for revealing which presentation unit is rendered on each device as the presentation progresses. The GUI also has four embedded tool bars, marked with callouts 1-4, for device definition, file manipulation, presentation control, and playlist manipulation.

During a preview or actual presentation, EPIC controls the mapping of media to devices according to the playlist. When a presenter triggers a slide change, EPIC synchronously changes the media rendered for each device, and records the event. The presenter may also make ad-hoc changes by dragging hyper-slides to various media devices using the GUI. The resulting history consists of a new playlist with timing information. This history may be used to index a multimedia recording of the presentation, but also the new playlist can be saved for future presentation. Moreover, when a presenter gives a presentation at a remote site, the presenter may also use a mouse to mark a region in the video canvas and see the detailed video in the zoom pane.

3.2 Getting Started

There are 6 steps for authoring a presentation using EPIC:

1. Define hotspots based on a conference room picture or conference room pictures

2. Define web camera/microphone connections

3. Import media files

4. Author the play list and media files

5. Preview presentation

6. Show presentation.

The first two steps only need to be performed once for every meeting environment. The 3~5 steps are useful for a user to customize a presentation for a specific environment. If the user does not want to customize the presentation but still want to use various devices in the environment, s/he can set rules for authoring automation and let the system prepare the presentation.

3.3 Defining and Using Hotspot

Hotspots are canvas regions showing devices in a venue. They are useful for referring various devices seen in the canvas. In the video, hotspots are bounded with colored boxes. When a hotspot definition does not exist, a user may import an image file and use the mouse to draw bounding boxes on the image canvas. Whenever a bounding box is done, the EPIC software will pop out a dialog box for defining name, computer host, and port for the hotspot. Right mouse-click on a hotspot may activate a menu

for redefining or removing the hotspot. After all hotspots are defined on an image canvas, the definition can be saved in an .hsp file for future imports. During authoring or an actual presentation, a user may define the playback device of a presentation unit by dragging the thumbnail of the presentation unit to a hotspot for the device.

3.4 EPIC Settings

There are two types of settings for EPIC. The first type of settings allows people to define, save, and import web connections of cameras used in a teleconference. The second type of settings allows people to define presentation mode (i.e. remote presentation, local presentation, or preview.)

3.5 Handling Media Files

EPIC can accept various media files, and manage presentation units from all imported files. After all related media files are imported, the user may customize playback device and event time for every presentation unit.

3.6 Constructing Playlist

A playlist is used to organize various presentation units into a unified presentation. It is also useful for revealing presentation units' relations on a display. Each row of playlist corresponds to an available device, while each column of playlist corresponds to an indexed state, which is used to synchronize presentation units' playbacks on various devices. The authoring process of EPIC is to find proper playlist slots for all presentation units. Users may define a slot for a presentation unit by dragging the thumbnail of the presentation unit to the slot.

3.7 Presentation Preview and Playback

After a user defines a playback device for each presentation unit, the user may set EPIC to preview mode, and use the presentation control tool bar to navigate the authored presentation. During the preview process, slide images will be inserted in hotspots to mimic the playback effect in the real environment. When EPIC is set to 'Remote Presentation Mode', the image/video canvas and zoom pane will show videos captured by remote cameras. When the user navigates the presentation, remote displays will be changed according to the playlist. When EPIC is set to 'Local Presentation Mode', the computer running EPIC UI will also be used as a display. A user can only use keyboard to navigate the presentation when the UI display is covered by a slide. This mode is useful for a presentation in a local meeting room where the presenter does not need the meeting room video.

4. SUMMARY

In this video, we show how users learn EPIC functions, and present at a remote place using EPIC.

5. REFERENCES

[1] Micromedia Director MX.
http://www.macromedia.com/software/director/

[2] Richard Anderson, Jay Beavers, Tammy VanDeGrift, Fred Videon, Videoconferencing and Presentation Support for Synchronous Distance Learning. *33rd ASEE/IEEE Frontiers in Education Conference*