

Overview:

Usability labs are designed to evaluate the ease of use, effectiveness and ergonomics of computer software and hardware. When studying software usability, researchers typically examine issues such as whether a program's human interface is intuitive by design and how well, in practice, the software accomplishes the objectives for which it is designed. For hardware, such as keyboard, mouse, trackball and graphic tablets, researchers evaluate the ergonomics of the products' design.

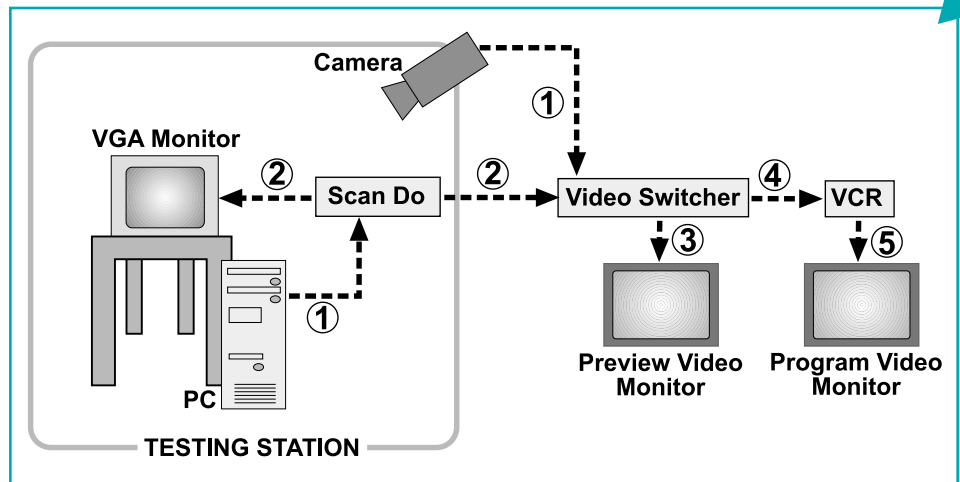
In order to perform effective analyses, researchers must be able to observe and then repeatedly review both the human interaction with the software and hardware and the graphic output as it appeared on the monitor. This requires the recording of the subjects' interactions with the test products. This TECHniques illustrates how CSI's family of Scan Do® computer-to-video scan converters may be employed in a usability lab setting to best record the images from the computer monitor, which may then be integrated with camera shots of the subject interacting with the software and hardware. This combined capturing of information can provide the researcher with the most complete picture of the subject's "test experience", therefore aiding him in developing recommendations for the refinement of the test products.

Details:

Often in usability labs, a camera will be used to observe and record the image on the computer monitor's screen along with the accompany actions of the computer operator. Two problems arise in this scenario. First of all, because a computer video signal is not synchronous with a standard video signal, an annoying horizontal bar will constantly roll through the recorded image of the computer monitor's screen. In addition, if the computer operator is positioned squarely in front of the computer monitor, the video camera must be placed at an angle, thus providing a distorted perspective of the monitor screen.

Scan Do provides a sharp, "straight-on" picture of the computer monitor's output in a format that can be recorded to videotape without any rolling bars. In addition, the unit is unobtrusive and therefore will not interfere with the computer operator's actions.

Scan Do may be used in any usability lab setting, from simple, over-the shoulder, single-camera setups, to sophisticated testing facilities that include



several cameras for observing posture and hand and eye movements combined with timing mechanisms. In the most simple, single-camera setup, Scan Do may be used to simultaneously observe and record the computer screen while a camera captures the human response. For this application, Scan Do Select is most appropriate. It is compatible with computer resolutions up to 1280x1024 and features picture sizing from 85% up to 200% so that the complete computer screen or enlarged portions are viewable in the standard video formats. In addition, Scan Do Select's four levels of anti-flicker filtering eliminate disturbing jitter of fine horizontal lines, like those found in spreadsheets, fine text and desktop icons.

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In more complex usability lab systems, several cameras may be used along with other types of equipment. These include character generators, timers and video switchers or special effects generators that mix and combine multiple video sources for simultaneous viewing on one video monitor and recording on one VCR. To integrate the computer monitor's image with this type of system, a scan converter with genlock capability is usually necessary. This allows the scan converter's output to be made synchronous with the other video sources in the system. Scan Do Pro and Scan Do Ultra both offer a genlock feature. (When using a video production switcher that features an internal synchronizer, genlock may not be required on the scan converter.)

Suggestions:

Place the scan converter as close as possible to the computer's CPU to assure the best signal quality. Most Scan Do models offer an RS-232 control feature, so the lab operator may easily change the unit's operating parameters from a remote location.

For those systems where the scan converter is placed near the video switcher or VCR (away from the CPU), a video splitter must be used to drive the computer video signal over this extended distance. Using CSI's TwinSplit for VGA, the scan converter may be placed up to 250 feet away from the CPU.

Always use good quality, high-resolution cables to connect the computer graphics card to the Scan Do, to connect the loop-through support from Scan Do to the computer monitor, and to link Scan Do's video outputs to the production switcher or VCR.

CSI Products Used In This TECHnique:

- Scan Do® Select..... 1290
- Scan Do Pro II 1291
- Scan Do Ultra1274
- Scan Do Ultra D..... 1277
- TwinSplit® for VGA 1302
- Video Coax Cable (BNC) 1159
- S-Video Coax Cable (4-pin mini-DIN) 1130
- VGA Coax Cable (HD-15 M/M or M/F) 1119

Related TECHniques:

- Educational Guide: *Scan Converter Buyers' Guide*