WISP Hardware List and Description

PC to run WISP. We have a PC running 64-bit Windows 7 with 4 GB of RAM. It has a video card with four digital (DVI-D) outputs (Nvidia NVS 420) so that it can provide output to three stimulus displays (Left, Right, Center) along with a control screen. Because the conversion from DVI to VGA adds complexity and cost, a better approach might be to use two video cards which can each drive two VGA outputs. Many video cards have one VGA output and one DVI-I output which can be converted to VGA.

DVI Splitter. We use StartTech DVI splitters (ST122DVIA) to split the DVI video signal from the computer.

VGA Splitter (alternate). If using VGA output from the PC, you'll need VGA splitters instead of DVI splitter. I would recommend something like:
http://www.monoprice.com/products/product.asp?p_id=3569

DVI to VGA Converter. We initially used some StartTech DVI to VGA converters, but these did not work well, so we replaced them with HDfury converters. These seem to have been discontinued, although they are still available directly from the manufacturer. If VGA outputs from the PC are used, this converter is not necessary.

VGA to Composite Converter. We have used StartTech VGA2VID converters with good results.

Quad Splitter. We use a Clover QC900 Color Real Time Digital Quad Splitter to combine video from the camera with video from the three stimulus displays. I have not seen anything else comparable that is remotely in the same price range, and have had pretty good luck with it, although I have had one unit which had to be exchanged.

Digital Video Converter. We use a Canopus ADVC 110 to convert the video signal from the Quad Splitter to digital video. This has a firewire interface, so the PC used to record video must have a firewire card installed.

Camera. We use a Security Labs SLC-160C security camera to record participants. This camera was selected because the zoom can be controlled remotely on the recording PC (via RS-485). If remote-controlled zoom is not important to you, you may find that another camera would provide higher-quality video. The camera has a BNC video connector but supplies a BNC to RCA adapter if you would like to run a RCA composite video cable. It also supplies video baluns (with BNC connectors) that allow you to transmit the video signal using unshielded twisted-pair wire. Fifty feet of Ethernet cable is included, and we use that to transmit video, zoom control, and power for the camera.

USB/RS-485 Interface. We use a USB-232-1+CVT-485-1 interface available from CommFront.com. This is used to interface the camera zoom control with a USB port on the video-recording PC.

Microphone. I have selected an Audio-Technica Pro 45 microphone to record audio in the testing booth. We haven't set it up yet, but it seems like a reasonable choice. This microphone requires Phantom Power to operate.

Mic Preamp. The least expensive way to power a microphone I have found is with a Behringer MIC100 microphone preamp. Both the microphone and the preamp are available at bhphotovideo.com.

PC to Record Video. We use a PC running Debian Linux to record video using a program called Kino. It would certainly be possible to record video using a different program on another operating system, but I do not have any specific recommendations. As noted above, the PC must have a firewire card installed.

Left/Right Stimulus Monitors. We use ordinary 19" non-widescreen Dell monitors for the left and right displays.

Center Stimulus Monitor. We use a Toshiba 55UX600U 55" LED HDTV for the center display. This has both HDMI and VGA inputs; we're using an HDMI input (via a DVI to HDMI cable). We are not currently using the built-in speakers, but that is under consideration.

Audio Splitter. We use an audio splitter (something like http://www.monoprice.com/products/product.asp?p_id=7205) to separate the right and left audio channels for redirection to the left and right speakers.

Speakers. We are using some unremarkable PC speakers for left and right audio. Note that having more than 2 channels of audio output from WISP (e.g., separate channels for right, left, and center) requires having a second sound card. Only two channels per sound card are supported.

Cables. If you need a source for the various cables that will be required, I recommend monoprice.com. The cables are generally excellent quality and are cheaper than just about anywhere else.