Producing a Video to Accompany Your Article

Introduction
Would you like to submit one or more digital videos with your manuscript as part of the review process and also have the files accompany your published article on IEEE Xplore®? Following is a short guide on how to produce a successful video to complement your written work.

Before You Begin
You should prepare a detailed script for the video and rehearse it. You may ask someone else to do the speaking in your video, but it is usually best to hear directly from you or a coauthor. The pacing of the script is also important; too slow and the viewer may become bored, too fast and you may lose some viewers. Next, test your draft script with peers. Do they find it interesting and understandable?

Once you are satisfied with the script, sketch-out ("storyboard") your video in shot-by-shot detail. Do the transitions between scenes make sense? Can you visualize how the completed video will look? To keep the viewer’s interest, do not stay on one static camera shot for too long; alternate between different shots such as experiment results, computer screen shots, and, if appropriate, your face, your hands, etc. Get as close to the subject of each shot as possible so that what you are illustrating fills the frame.

Video Equipment
Use the best quality video equipment that is available to you. If you have access to a high-quality video camera through your institution, use it. Do not use a camera phone and expect to get results you want to share. Good production quality can be achieved with the equipment found in most universities, companies, and even what is now available for home video production. Keep the camera on a tripod or another stable surface in order to produce video results that aren’t shaky.

Lighting
It is extremely important to consider lighting needs when planning your video. You don’t want your subject of interest to appear either too dark or too bright. If possible, avoid mixing natural and artificial lighting since this can cause inaccurate colors in the video. Also, most video cameras have a feature called “white balance” which removes unrealistic color casts and will enhance the contrast between your subject and the background. Do a few short test shots with different lighting until you are getting the results you desire.

Audio
As with lighting, there are a few straightforward techniques you can use to improve the quality of your video. In many cases, the microphone built into a video camera is inadequate. To overcome this, you can either record the narration separately on a computer and edit it into the video later or, more simply, use a separate microphone (a collar clip-on will usually give good results) that is plugged directly into the video camera. This will also help you minimize extraneous noises that camera microphones may pick up.

Capturing Information from Computer Screens
There are two standard ways to capture images and actions from a computer screen:

- by pointing your camera at the screen and recording or by using screen capture software that generates digital video files that you can incorporate into your video.
If you use the camera method, check for glare and adjust your lighting to remove or reduce it as much as you can. Shooting the image from a flat panel (LCD) display usually removes some of the problems seen with older CRT monitors such as a distracting “refresh” line or flickering video.

- The best option is usually to use screen capture software to generate digital video files; most software can capture either the entire screen or a specific area of focus. Since screen capture only captures the screen, for viewer interest you may want to edit in wider shots to show the user interacting with the system.

**Editing and Creating Digital Video Files**

Use video editing software to assemble the scenes into a finished video. If you do not already have this software, search the Internet for your best options based on your computer and the video you want to produce. There are many commercial options such as Apple’s iMovie, Adobe’s Premiere, and Corel’s VideoStudio, as well as many excellent shareware software products.

**File Specifications**

Remember that when you submit a video with your paper, it will be sent to your peers for review. If your video does not play when the reviewer attempts to open it, it is unlikely that they will take the time to install additional software or buy special video codecs to be able to view it. For results that will open easily on most computers, when saving or exporting your final video from the editing environment, save the file as either MPEG-4, .mov (Apple Quicktime), or .avi (Microsoft audio-video interleaved).

If you have questions on these specifications, e-mail editsupport@ieee.org.