Windows Media Encoder Guide
(Video and Audio)

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1. Video Camera - Windows Media Encoder

Examples of video cameras that can be viewed using WebAccess include the Logitech series of cameras. These cameras are usually USB devices that connect to a PC.

Windows Media Encoder broadcasts the live video over a TCP/IP connection. Windows Media Encoder (version 9 is recommended) should be installed on the PC connected to the video camera.

1.1 Download Windows Media Encoder

Windows Media Encoder (version 9 is recommended) should be installed on the PC connected to the video camera. You can download this at no charge from Microsoft. The general (and shorter) address is:

http://www.microsoft.com/downloads/search.asp

The Link to the Media Encoder download is:

http://www.microsoft.com/windows/windowsmedia/9series/encoder/default.asp?FinishURL=%2Fdownloads%2Frelease%2Easp%3Freleaseid%3D42209%26area%3Dtop%26ordinal%3D6%26redirect%3Dno

The ENCODER should not be confused with the Player. You need Windows Media **Encoder** in order to broadcast Live Video over the Internet from your camera. (You can use media player to view from another PC).

1.1.1 CPU Loading

Media Encoder will take up a lot of CPU resources (100% on a 750 MHz Pentium 5). It is not recommended to use a SCADA Node or Project Node as the Media Encoder PC without first staging and testing for CPU load (except for a DEMO or training).

1.1.1.1 System Requirements

In general the system requirements are Windows 2000 or Windows XP, 300 MHz minimum, 866 MHz recommended for capture and broadcast of Video and Audio. The Microsoft recommended system Requirements for capture and Broadcast of Video using Windows Media Encoder are at:

http://www.microsoft.com/windows/windowsmedia/9series/encoder/relnotes.
asp#sysreq

1.2   Configure Windows Media Encoder

After you have installed Windows Media encoder, you have to start, and configure media encoder to select the camera, TCP Port to broadcast over and other details. As always, we recommend that you use the default setting whenever in doubt.

This example is for a Logitech Camera that is plugged into a USB port. But any camera with Plug-n-Play capability with Microsoft Windows will work.
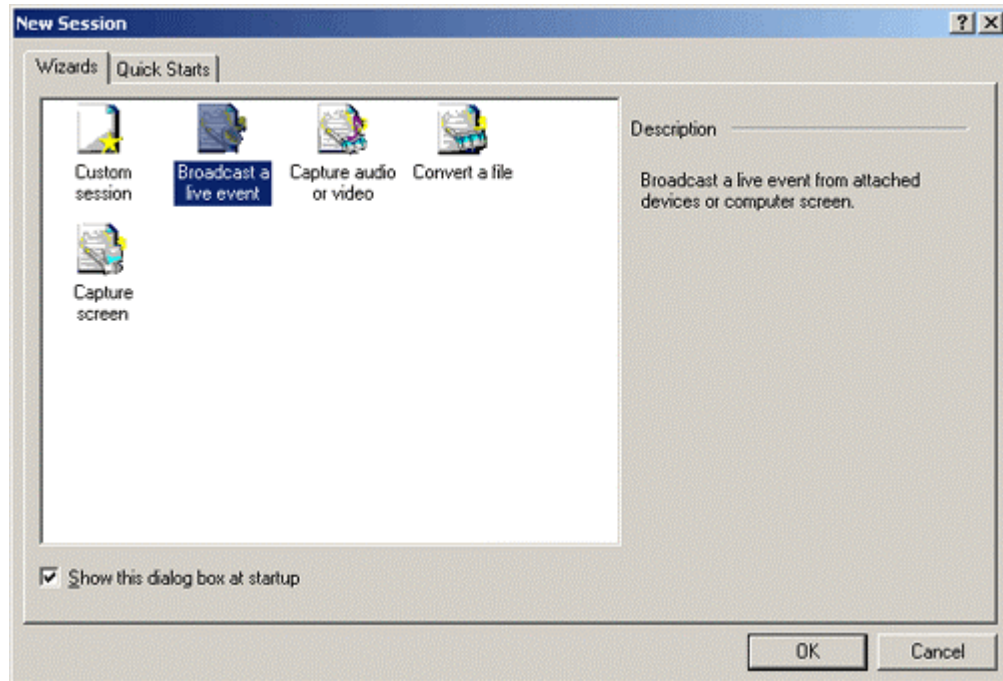
Windows Media Encoder must be running in order for other computers to see the camera.
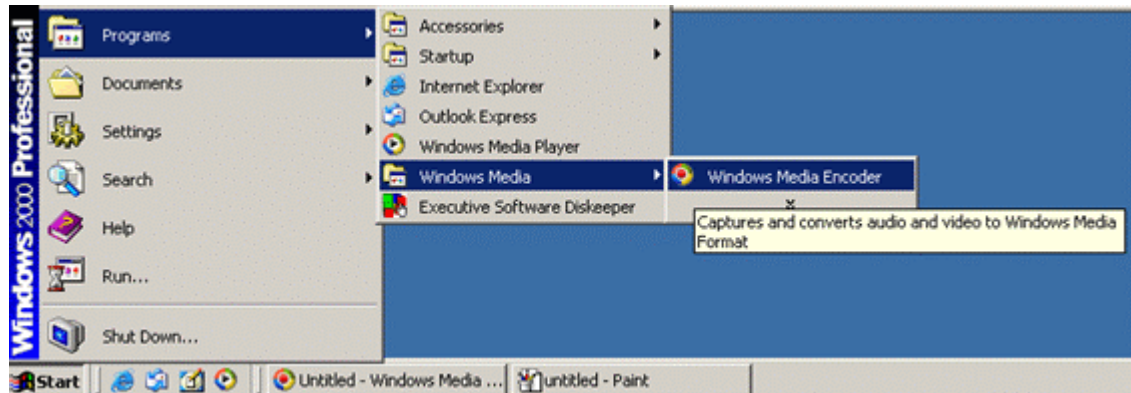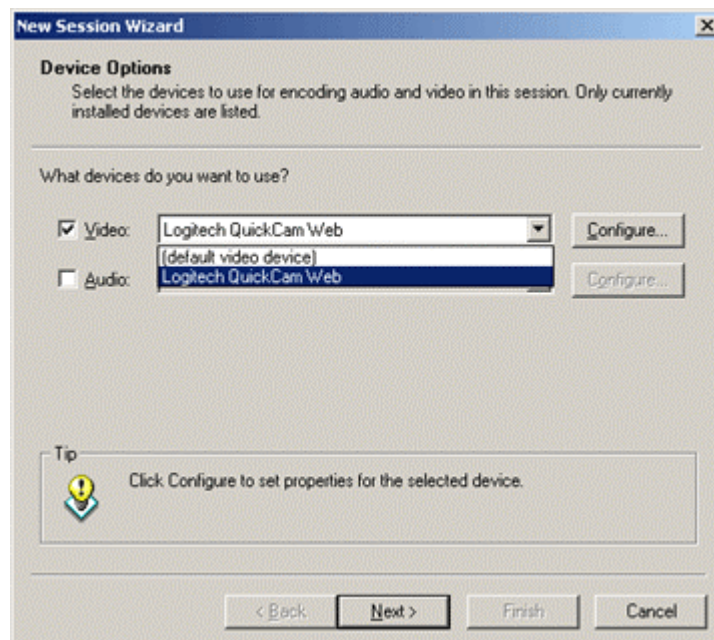
Step 1 - Start Windows Media Encoder

1. From the START menu select

Start -> Programs -> Windows Media -> Windows Media Encoder

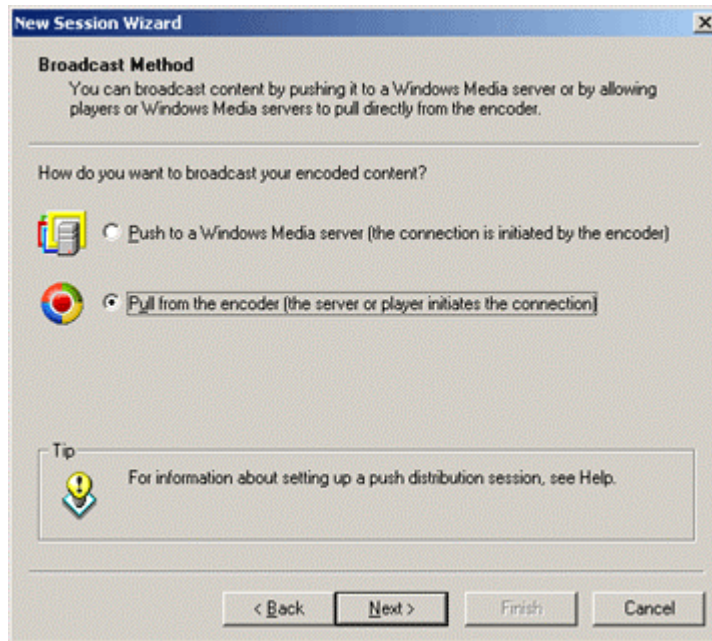Step 2 - Select Broadcast a Live Event

2.   Select **Broadcast a Live Event**.

Step 3 - Select your camera - Logitech Quick Cam shown
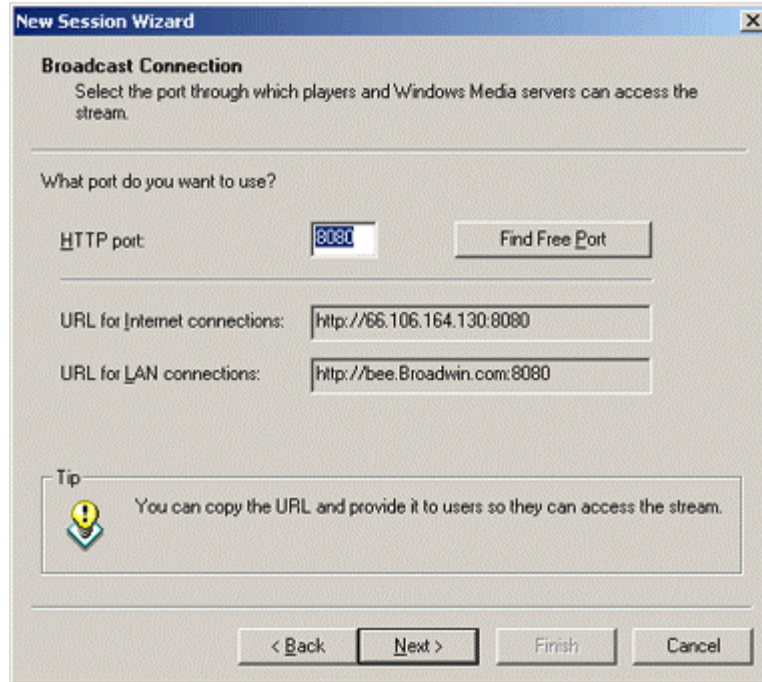
3.   Select your camera from the pulldown list next to Video. Be sure the checkbox is checked to enable Video broadcast.

4. Optionally select the Sound Card from connected to your microphone from the pull down list to audio.
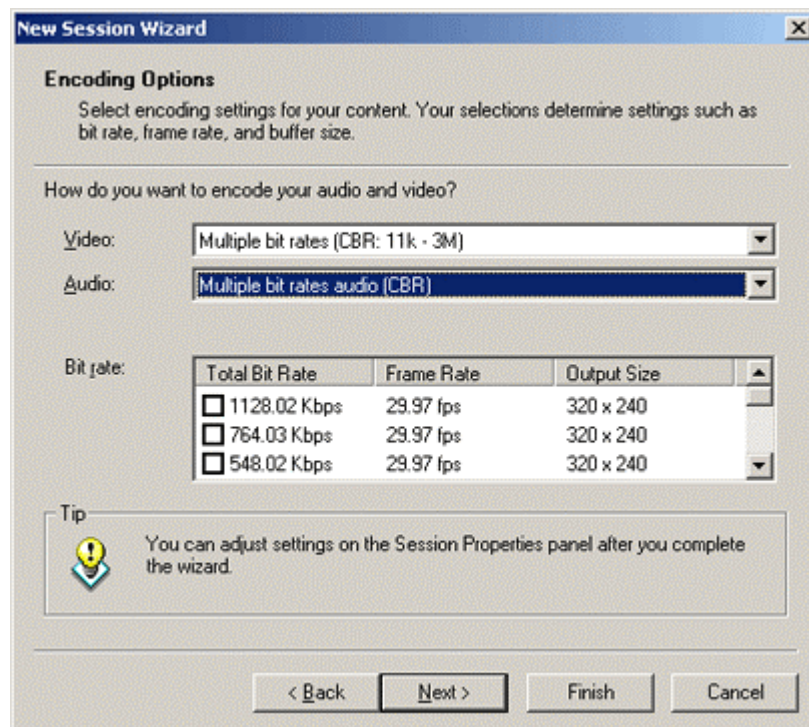
5. Select **Next**.

Step 6 - select Pull from the encoder

6. Select Pull from the encoder (the server or player initiates the connection).

7. Select **Next**.

Step 8 - enter a TCP Port - 8080 is recommended default

8. Enter a TCP Port for the Video Broadcast. 8080 is the recommended default.

9. Select Next.

Step 10 - Accept default, Multiple bit rates (CBR: 11k - 3M)

10. Accept the default for Video Encoding: **Multiple bit rates (CBR: 11k – 3M)**

11. Optionally accept the default for Audio Encoding: **Multiple Bit Rates (CBR)**

12. Select a Bit Rate: the **282 Kbps 29.97 fps** and/or **141 Kbps 15 fps**

13. Select **Next**.
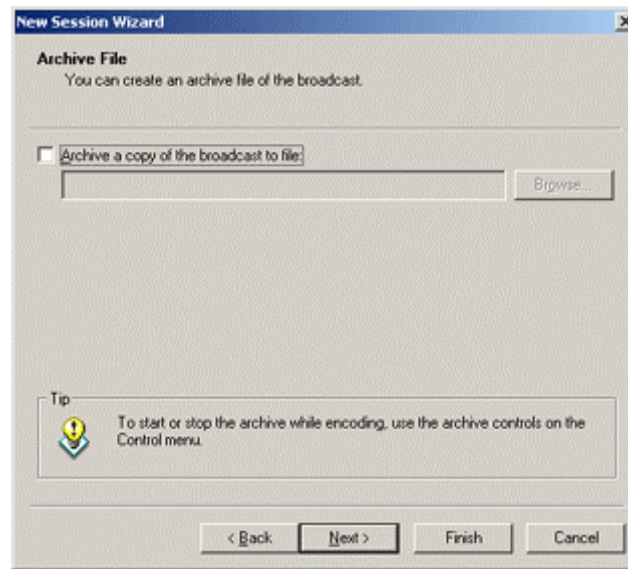
Step 14 - do not archive

14. Do not archive unless you have a very, very large amount of disk space and CPU seed. Video will create very large files rapidly. It is recommend to accept the default (uncheck Archive).

15. Select **Next**.
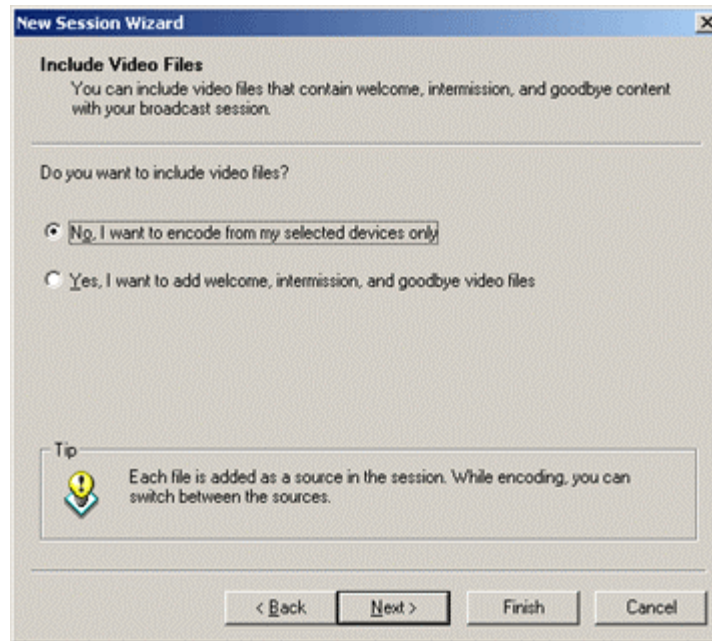
Step 16 - don't include video files

16. Select **No, I want to encode from my selected devices only.**
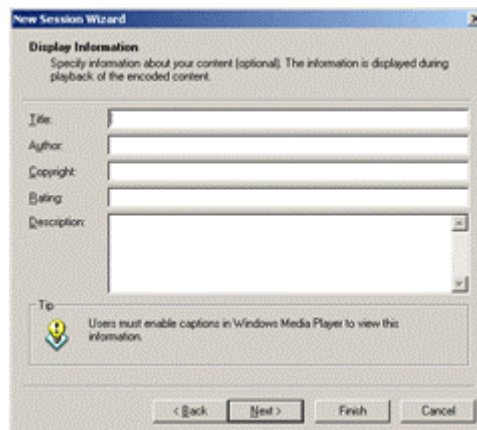
17. Optionally enter Title and Author information. Select **Next**.
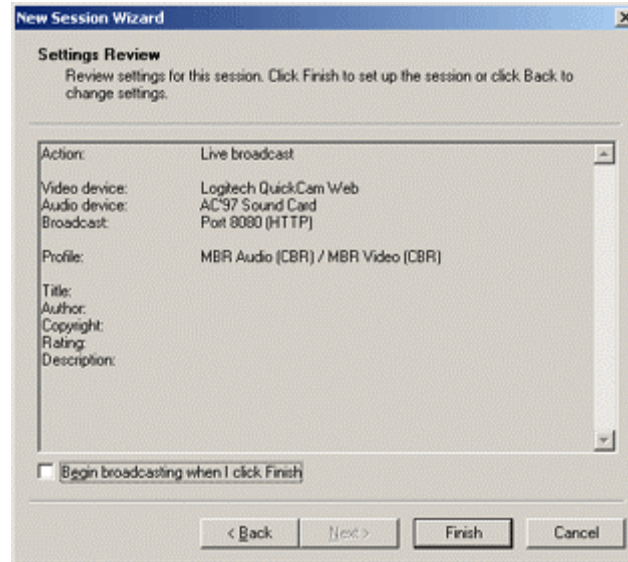
Step 18 - Finish

18. Optionally select **Begin broadcasting when I click Finish**. Select **Finish**.
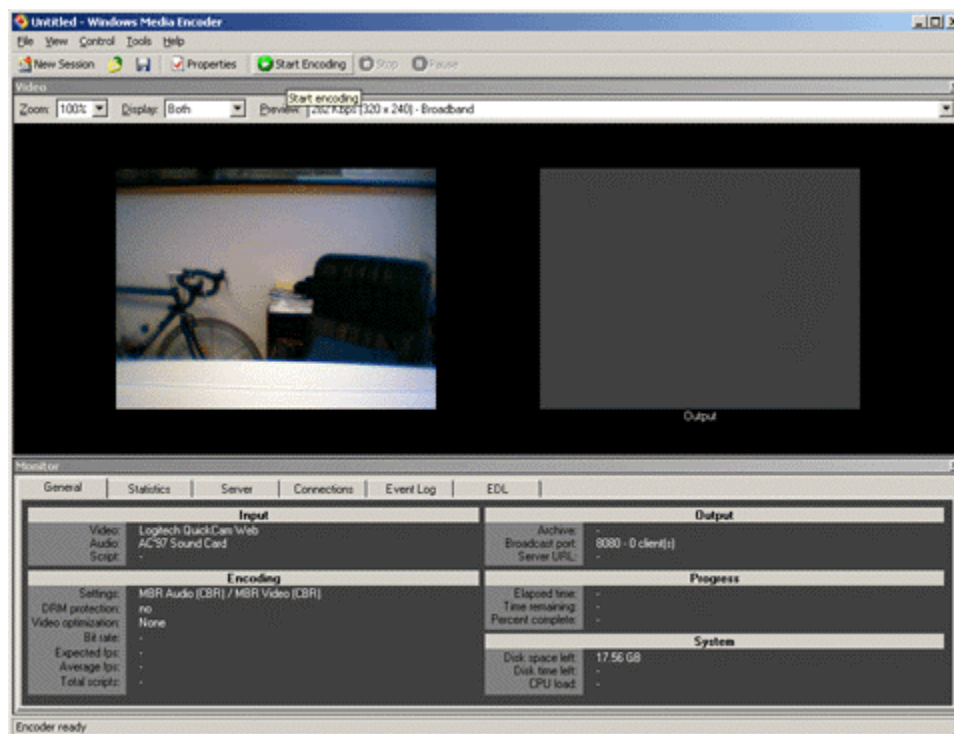
Figure - Media Encoder Capture, but not broadcasting.

19. If you see only the Window on the left with an image, but the Output Window on the right is blank, then you are not broadcasting. Select **Start Broadcasting**.
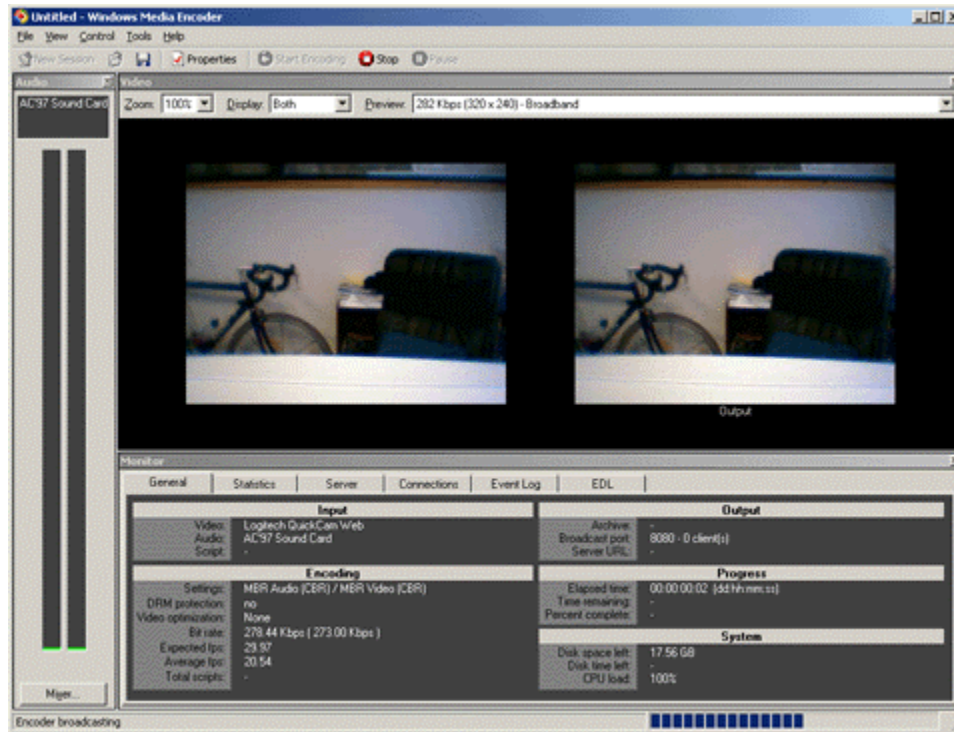
Figure - Widows Media Encoder - capture and broadcast images

20. If both windows show an image, Congratulations! You have successful setup Windows Media encoder.

21. To lesson system load, you can close the local display of video images from the menu bar:
View -> Video Panel

    Un-checking Video Panel will display windows, but continue to close capture and broadcast video (and audio).

22. Save the setting from the menu bar: **File -> Save**

2. Configure Video in WebAccess

There are two general ways to add your newly configured Windows Media Player to the Web:

1) Configure **Video** on a **SCADA Node**. There is no display building required. The Camera appears full screen in WebAccess VIEW. This is done from **SCADA Node Properties**.

2) Draw a Dynamic Video object in a Graphic Display using **DRAW**. You can mix your Video with animation trends etc.

Figure - Live Video mixed with animated graphics, real-time data and trends

2.1   WebAccess Video configuration

This section assumes the camera is on-line and functioning. Please refer to the camera manufacturer's documentation on how to start the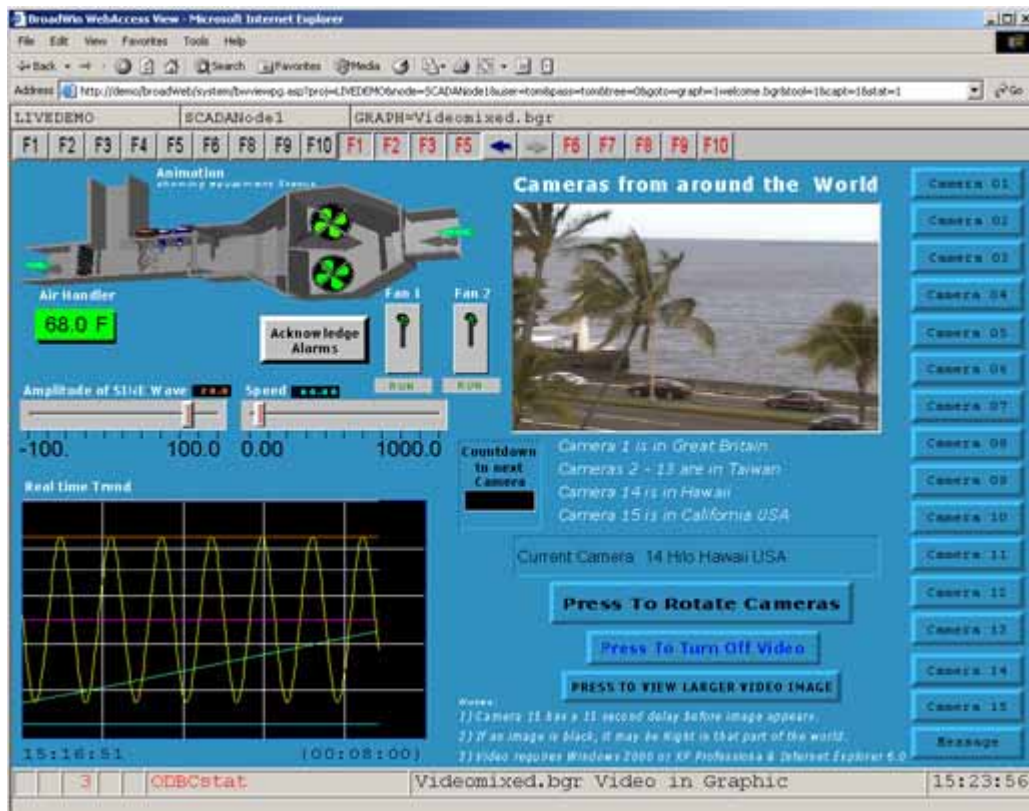 camera and assign an IP address to it.   The WebAccess Clients communicate directly to the camera. The IP address of the camera must be available to all the WebAccess clients that are to view the camera.

1. From the Project Manager, Select your **Project** and the **SCADA Node**.

2. Click the **Video** hyperlink.

3. Select **Add Video** hyperlink.

4. The Add/Update Video page appears.

Figure - maplayer (Windows Media Encoder) video type

5. **Video Name**. Enter a name that will appear in Dialog Boxes used by operators and users.

6. **Description**. Enter a description that will appear in the project manager.

7. **Video Type**. Select **mplayer (Windows Media Encoder)**.

8. **Video IP Address**. Enter the IP address of the PC running Media Encoder. This address must be accessible by WebAccess VIEW clients directly.

9. **Port Number**. Enter the TCP port assigned to the camera. 8080 is the default port number for most Media Encoder and the port number used in the above setup instructions.

10. **Local Tag File**. Optionally, screen tags can be associated with the Video. These are a Local Tag file configured DRAW. These allow a screen script to use Local Tags for rotating between video cameras or other customization.

11. **Local Script File**. Optionally, screen scripts developed in the script editor of DRAW can be used to rotate between video cameras or other customization.

    a. **On Entry** is a screen script that executes once when the Video Display is called in VIEW.

    b. **On Exit** is a screen script that executes once when another Display is called and this display is exited in VIEW.

    c. **While Showing** is a screen script that executes continuously at the specified **Interval** while this Display is displayed in VIEW.

    d. **Interval** is the frequency the While Showing Script repeats.

    e. Press **SUBMIT.**

    f. **Download** and Start your SCADA node.

Note -   *You do not need to configure Video on the SCADA Node is you are only planning to show Video mixed in a Graphic Display with animation. You can configure video in DRAW directly. However, the pull down lists make Video configuration on the SCADA node easier than in DRAW.*

2.1.1   VIEW Video Cameras

In VIEW and ViewDAQ, operators and users can call up a Dialog Box that lists all the cameras configured. Pushbutton Keymacros built by engineers and technicians in DRAW can open a VIDEO camera window.

The Video cameras are viewed in an Internet Explorer 6.0 or later web browser. Even if using ViewDAQ, Internet Explorer must be installed on the clients in order to view cameras. Video requires Windows 2000 or Windows XP Professional.

2.1.2   Single Video Display

No display building is required to view a configured Video Window. The Camera will appear full screen if called from the Video List Dialog Box <F10>.

The <F10> key macro and the Menu Item (Right Click -> Goto -Video) display a list of all configured cameras. Pick the desired camera form the list and it will appear in full screen.

Popup Windows can be built using the <GOTO>URL Keymacro.

2.1.2.1 Video Dialog Box - F10

In VIEW and ViewDAQ operators and users can call up a Dialog Box that lists all cameras configured for the SCADA node. There are several methods to call up the Video Dialog box.
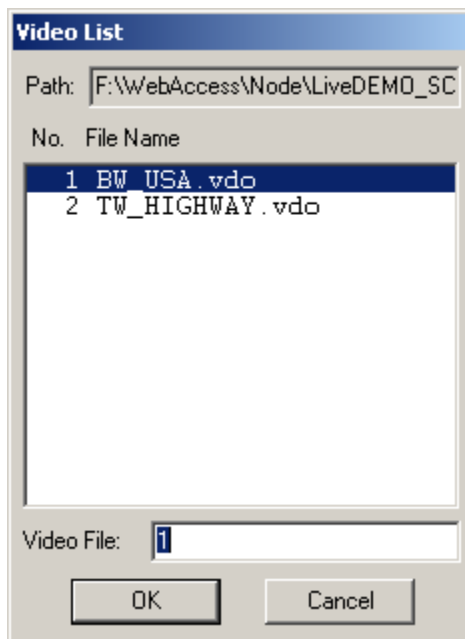
F10 function key on keyboard.

<F10> keymacro assigned to a pushbutton on a user built display.

<F10> on a toolbar.

<DIALOG>VIDEO assigned to a pushbutton on a user built display**.**

Right Click Menu -> Goto -> Video

The Video List Dialog Box will display the Camera in VIEW or VIEWDAQ window (i.e. full size).

2.2   DRAW Video in a Graphic Display

Video can be added to user built Graphic Displays and mixed the real-time data, widgets, trends and animation.

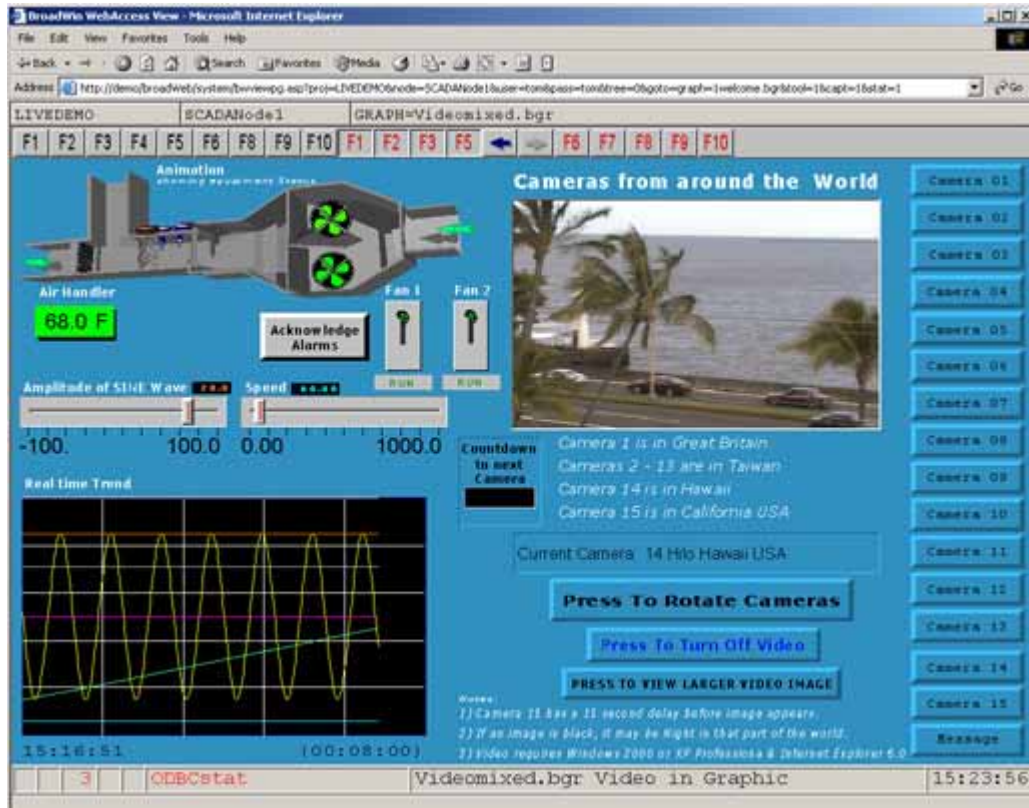Figure - Live Video mixed with animated graphics, real-time data and trends

Multi-camera Displays, including live tag data and trends are user-built graphic displays. Scripts can rotate between cameras in the same window, pause or jump ahead to another camera with pushbuttons.

Multi-camera Displays, including live tag data and trends can be built in DRAW using the **Dynamic -> Video Display** from the toolbar
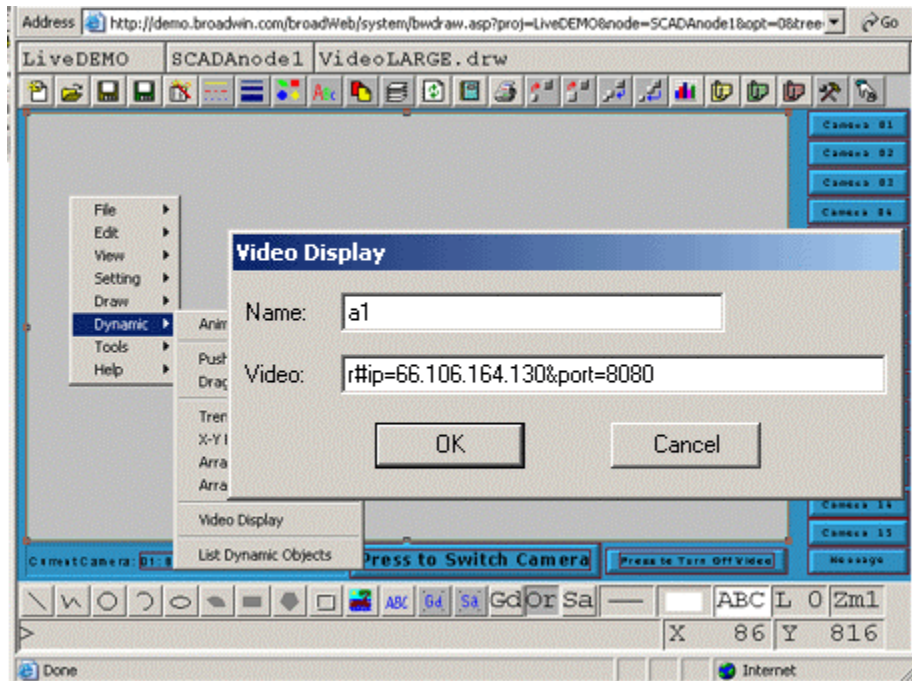
Figure - DRAW DYNAMIC VIDEO window in a user built Graphic Display

To configure the Video Display in a User Built Graphic.

1. **Right Click the Mouse** (DRAW) (or select from Menu Bar (DrawDAQ)) select

2. **Dynamic** -> **Video Display**

3. Enter a **Name** for this Video Window. This will allow scripts and animation to change which camera is displayed in this window. (If you previously edited or drew a Video Display, these fields will have the data from the last Video Display edited).

4. Enter the **Video Driver** name, the pound sign (**#**) and the **IP address** of the Video Camera or PC with Media Player. For example:

   mplayer#ip=66.106.164.130&port=8080

5. Select **OK** .

6. **Click once** to define the **start** of a **rectangle**

7. **Drag** with the mouse to define the size of the Video Window in the Graphic.

8. **Click a second time** to define the **end** of the rectangle.

3. Advanced Video: Popups, Tips, Scripts,

3.1 Video Popup

3.1.1 Key Macro <GOTO>URL

To open the Video is a separate Popup window, with the ability to control the size and position, use the <GOTO>URL keymacro. It is recommended to use this in a Keymacro file and then call the keymacro file from a pushbutton.

1. Configure a keymacro file named, HwyCamera2, with the following keymacro:

   <GOTO>URL=http://66.106.164.175/broadWeb/system/bwviewpg.asp?proj=LIVEDEMO&node=SCADANode1&tool=0&stat=0&goto=webctrl=tw_highway.vdo^target=video2^height=400^width=450^left=470^status=0^toolbar=0

2. Assign a pushbutton with the keymacro to call the keymacro file:

   <MCREXEC>@Hwycamera2.mcr

3.2 Video Tips

3.2.1 Screen Capture

The Alt-PrtScn (Alt Print Screen Key) does not reliably capture Windows Media Encoder Video images.

To capture a Screen, make it full size then use PrtScrn (Print Screen) key on your keyboard.

3.3 Video Script Examples

Scripts can be built to popup a window, goto a full page or, rotate cameras

3.3.1.1 Open Video Popup script

The following is a Screen Script associated as the "While Showing" Script for a Video Display. It opens a Video Camera Popup based on a Digital Tag.

```
if {[GETVAL Digtag] == 1} then {
```

```
GOTO
URL=vdo:atoplc#ip=202.178.230.25&port=0^target=twn^width=640^heigh
t=480^left=100^top=50

}
```

3.3.1.2 Change cameras every minute

The following is a Screen Script associated as the "While Showing" Script for a Video Display. It rotates between 3 cameras. It uses a local tag file with screen tag named count.

```
SETVAL "count=%PLUS 1"
if {[GETVAL count] > 60} then {
SETVAL "page=%LOOPPLUS 1"
switch [GETVAL page] \
  "1"       {GOTO URL=vdo:camviewlc#ip=210.128.176.51} \
  "2"       {GOTO URL=vdo:atoplc#ip=66.106.164.161&port=0} \
  "3"       {GOTO URL=vdo:atoplc#ip=202.178.230.25&port=0} \
  "default" {GOTO URL=vdo:atoplc#ip=202.178.230.25&port=0}
SETVAL count=0
}
```

3.3.1.3 Pushbuttons and Rotate Multiple Cameras

This script is designed to rotate the Cameras displayed in Video Display windows named a1 every 60 seconds. Pushbuttons set Toggle (VideoOff) to turn off the display of video and VideoHold to pause the rotation between cameras. Use Dynamic ->Video and name it a1.

```
proc switchvideo {arg1} {
   switch $arg1 \
     "1"      {SENDVDO
a1=axiscam#ip=sprout.warwick.ac.uk&cgi=cgi-bin/mjpg/video.cgi}
\
     "2"      { SENDVDO
a1=mplayer#ip=66.106.164.130&port=8080} \
     "3"      { SENDVDO a1=atoplc#ip=66.106.164.161&port=0} \
     "4"      {SENDVDO a1=atoplc#ip=202.178.230.25&port=0} \
     "default" {SENDVDO "a1=videooff#msg=Press Rotate Cameras
button to rotate thru cameras."}
}

if {[GETVAL toggle] > 0} then {
   SETVAL "toggle=0"

   if {[GETVAL videooff] == 0} then {
      SETVAL "videooff=1"
      SETVAL "countold=@count"
      SETVAL "pageold=@page"
      SENDVDO "a1=videooff#msg=Press 'Video On' button to show
video."
   } else {
      SETVAL "videooff=0"
      SETVAL "count=@countold"
      SETVAL "page=@pageold"
      switchvideo [GETVAL page]
   }
}

if {[GETVAL videooff] == 0 && [GETVAL videohold] == 0} then {
   SETVAL "count=%PLUS 1"

   if {[GETVAL count] > 60} then {
      SETVAL "page=%LOOPPLUS 1"
      switchvideo [GETVAL page]
      SETVAL count=0
   }
}
```