

InView AOI Sample Code User Instructions

The following instructions describe how to use the provided Add-On Instruction (AOI) sample code with InView displays. The examples include 4 options:

1. Numeric Variable Update
2. Message Trigger
3. Alphanumeric Variable Update
4. Advanced Message Download

Each example has detailed instructions following an introductory page similar to this one.

InView Numeric Variable Update AOI User Configuration Instructions

08/15/07

System Compatibility

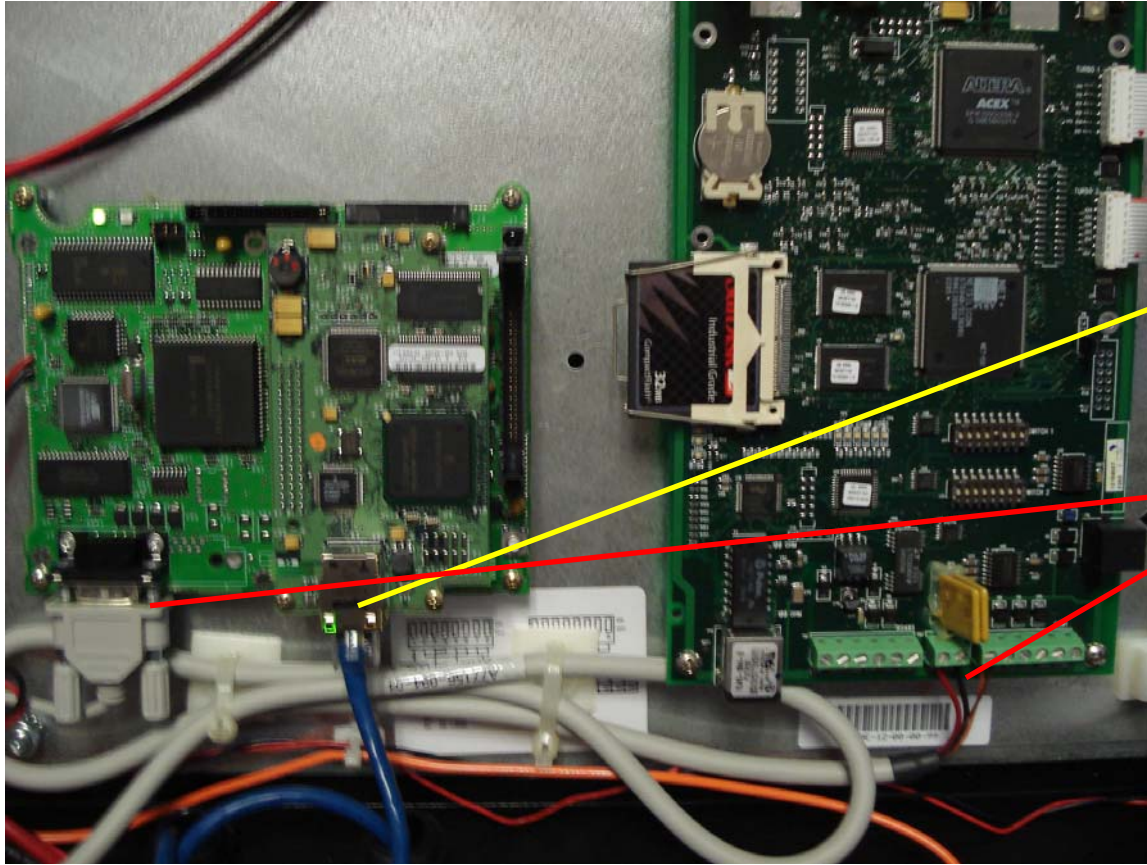
The add-on instruction file is compatible with:
RSLogix5000 V16 or later

NOTE: These instructions are for InView displays communicating over Ethernet/IP only. See 2706-UM017C-EN-P for information on configuring other networks. An additional communication module is required for Ethernet/IP.

2706-P22R
2706-P42
2706-P43
2706-P44
2706-P72C
2706-P74C
2706-P92C
2706-P94C

Overview Section

Below is a photo showing connections for a 2706-PENETK to a 2706-P92C InView message display.



Ethernet
network
connection

Serial connection
to the InView.

Note: the serial
cable is provided
with the kit.

Figure 1. 2706-PENETK connections.

This AOI creates the InView protocol string needed to update a numeric variable, once the messages have been downloaded to the InView using InView Messaging Software. All that's needed is for the ladder logic to pass the variable number, variable data, and the address of the display to the AOI. More detail is provided later in this document. A sample ladder logic file is included with this AOI zip package.

General Setup

The following instructions outline the steps, in order, that are necessary to successfully trigger messages on an InView message display.

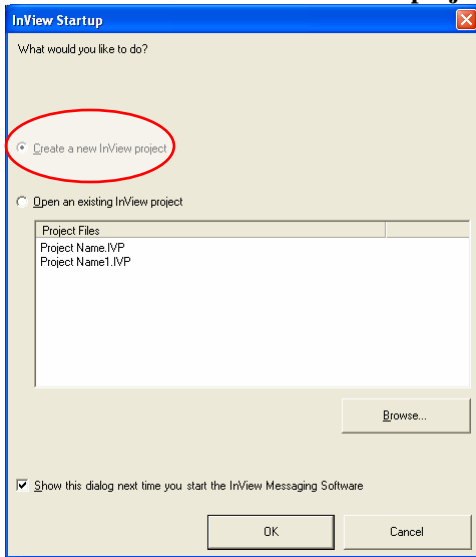
Step One – Configure the InView Communication Module

See the InView Communication Module user manual, 2706-UM017C-EN-P, for more information and instruction on how to setup the other protocols. Once the InView Messaging Software is launched, there will be a step by step process that will guide you through the project, display, and message file creation process.

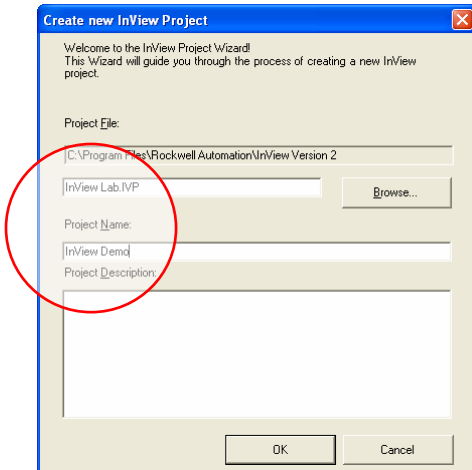
****NOTE** any selections or edits are automatically updated, there is no separate save feature.**

Go to **Start>Programs>Rockwell Automation>InView Software>InView Messaging Software** to start the InView Messaging Software. Once the InView Messaging Software has launched, you will be asked to either create a new project or open an existing one. We will create a new project.

1. Select the **Create a new InView project** radial button and click **OK**.



2. Enter a name for the **Project File** and for the **Project Name**. Click **OK**.



3. Select the display you are using from the **Display type** list. Enter a name for the display in the **Display name** field. Leave “1” as the number of displays required. Click **Next**.

Add Display - Identification - Step 1 of 3

Display name:
P22R

Display type:
2706-P22R

Number required:
1

Description:

Display Specification
Type: 2706-P22R
Dimensions: {Width=120, Height=7}
Colors: Red
Fonts: 5 High, 7 High, 7 Fancy

Cancel << Back Next >> Finish

Note: Description Field is used for more details regarding your display application such as; customer name, factory location or specifics of the display's use in your factory.

Next you will configure the type of communications between the display and the InView Messaging Software.

4. Select **Industrial Network Comms** and click the **Configure Communications** button under **Industrial Network Communications**.

Edit Display

Identification Communications Message File

Serial address: 1 Heartbeat: Disabled

Download Protocol:
☐ Serial ☐ Ethernet TCP/IP ☒ Industrial Network Comms

TCP/IP settings
Address: 192.168.1.100
Advanced... Configure Communications...

Serial port settings
COM port: COM1 Baud rate: 9600
Parity: None Data bits: 8
Stop bits: 1

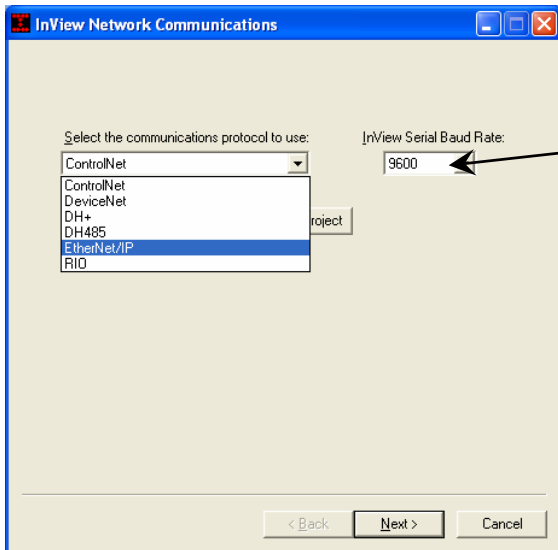
Industrial Network Communications
Protocol: None
Advanced... Configure Communications...

OK Cancel

Note: This section is used to select the type of communications the InView software on your PC will use to communicate to the InView

Note: These fields are used to configure communication on your InView display or communication module for use during runtime.

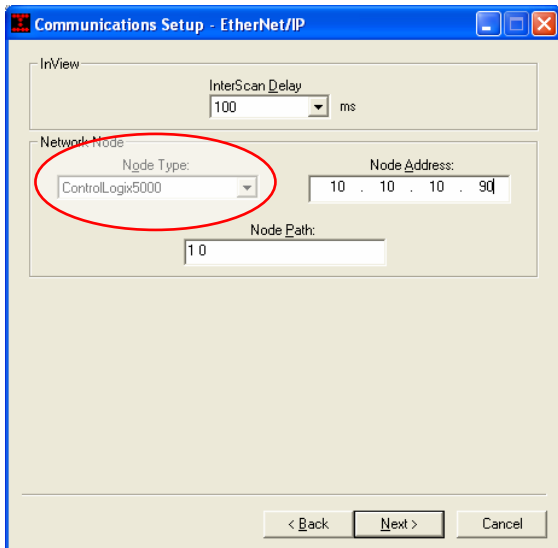
5. Select **EtherNet/IP** for the communications protocol and then click **Next**.



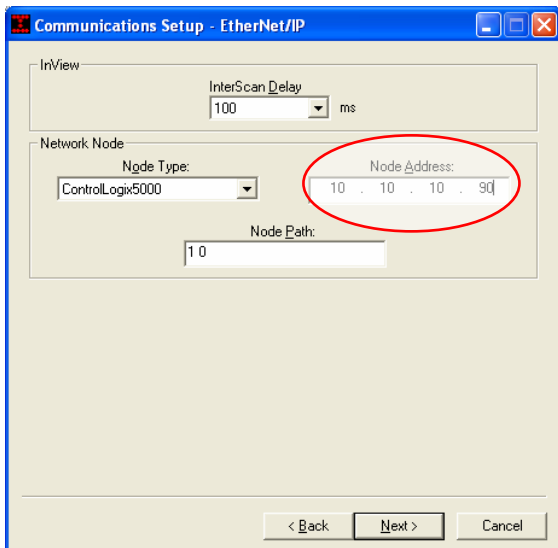
Note: **InView Serial Baud Rate** is the baud rate between the industrial communication module and your InView display. This should be set to 9600.

Now we will select the controller we are going to communicate with and its communications path.

6. Select **ControlLogix5000** for the **Node Type**.



7. Enter the IP address of the Ethernet module in the ControlLogix chassis for the **Node Address**.



8. Enter the backplane address and the node address of the controller that will be communicating to the InView. Typically this is 'I' space '0' for the **Node Path**. Click **Next**.

The screenshot shows the 'Communications Setup - EtherNet/IP' window. It has a blue title bar and standard Windows window controls. The main area is divided into sections. The 'InView' section has an 'InterScan Delay' dropdown set to '100' ms. The 'Network Node' section contains a 'Node Type' dropdown set to 'ControlLogix5000', a 'Node Address' field with '10 . 10 . 10 . 90', and a 'Node Path' field with '1 0'. The 'Node Path' field is circled in red. At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

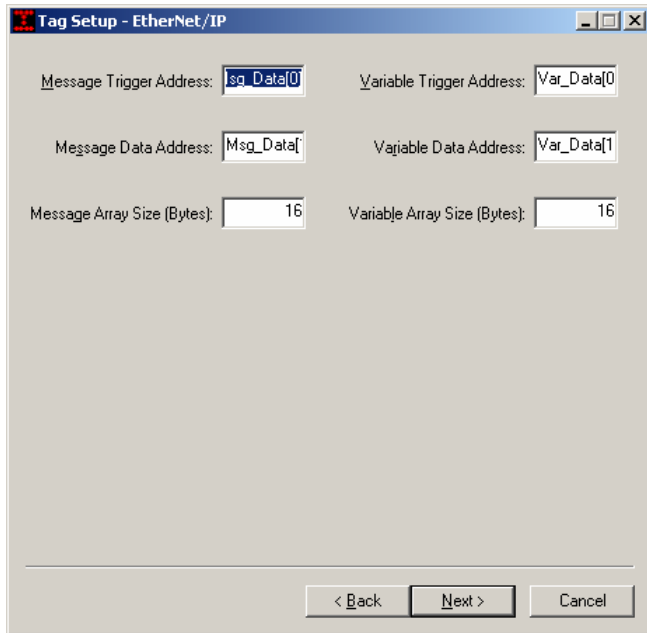
This step will set a static Ethernet configuration for the Ethernet IP communication Module.

9. Uncheck **DHCP/BootP Enable** and enter the IP address you would like to assign to the communication module. Enter '255.255.255.0' for the **Subnet Mask**. Leave the **Gateway Address** blank and click **Next**.

The screenshot shows the 'EtherNet/IP Configuration' window. It has a blue title bar and standard Windows window controls. The main area contains several sections. The first section has an unchecked checkbox for 'DHCP/BootP Enable', which is circled in red. Below it are fields for 'IP Address' (10 . 10 . 10 . 91), 'Subnet Mask' (255 . 255 . 255 . 0), and 'Gateway Address' (blank). The next section has an unchecked checkbox for 'DNS Enable', followed by 'DNS Server' (0 . 0 . 0 . 0) and 'Domain Name' (blank). The final section is 'Timeouts', with 'Connection Timeout' (15000 ms), 'Reply Timeout' (15000 ms), and 'Inactivity Timeout' (10 minutes). At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

The following step specifies the tags within the controller that will contain the data and trigger values. Enter both the Message & Variable information.

10. Enter '**Msg_Data[0]**' for the **Message Trigger Address** and '**Msg_Data[1]**' for the **Message Data Address**. Enter '**Var_Data[0]**' for the **Variable Trigger Address** and '**Var_Data[1]**' for the **Variable Data Address**. Click **Next**.



The 'Tag Setup - EtherNet/IP' dialog box contains the following fields and values:

Field	Value
Message Trigger Address:	Msg_Data[0]
Variable Trigger Address:	Var_Data[0]
Message Data Address:	Msg_Data[1]
Variable Data Address:	Var_Data[1]
Message Array Size (Bytes):	16
Variable Array Size (Bytes):	16

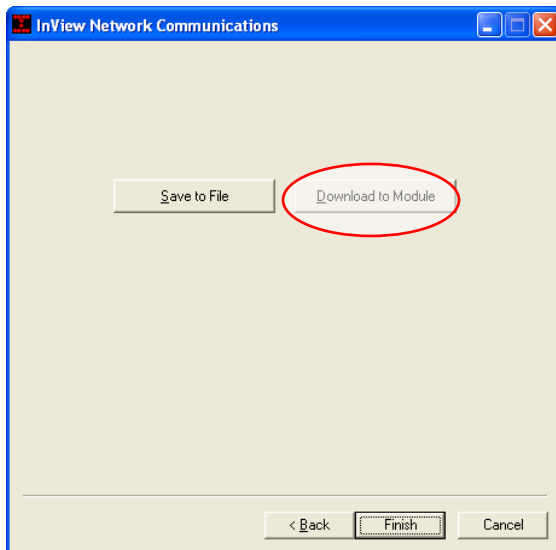
At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Note:

Trigger Address: this is the address that the InView communication module is monitoring to know when to output the data located at the Data Address.

Data Address: This is the address that contains the InView protocol for either triggering a message or updating a variable.

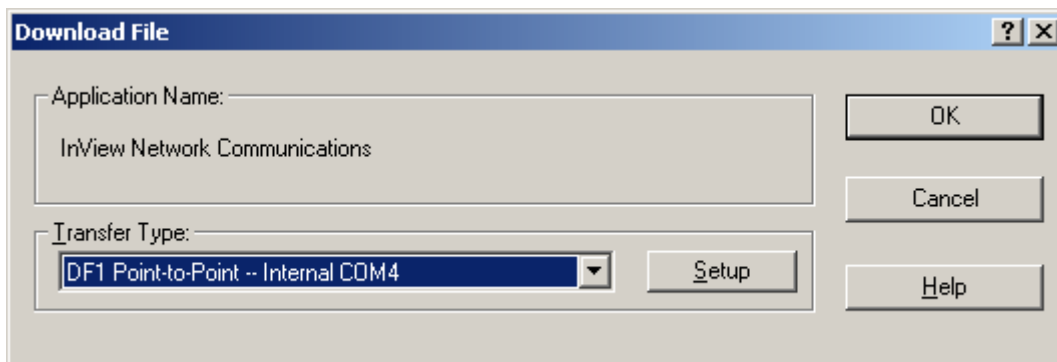
11. Click **Save to File** for future manipulation. Then click **Download to Module**.



The 'InView Network Communications' dialog box shows two buttons: 'Save to File' and 'Download to Module'. The 'Download to Module' button is circled in red. At the bottom, there are three buttons: '< Back', 'Finish', and 'Cancel'.

Note: Download of communication configuration for the first time is required to be performed serially.

12. Select DF1 Point-to-Point for the initial configuration download. Subsequent downloads can be done using RSLinx and the configured protocol.

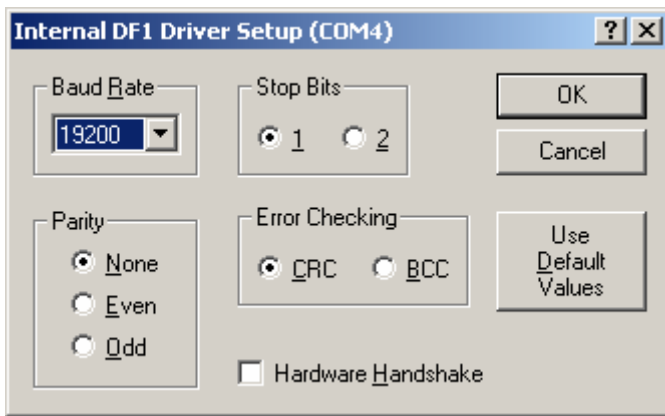


The 'Download File' dialog box contains the following fields and values:

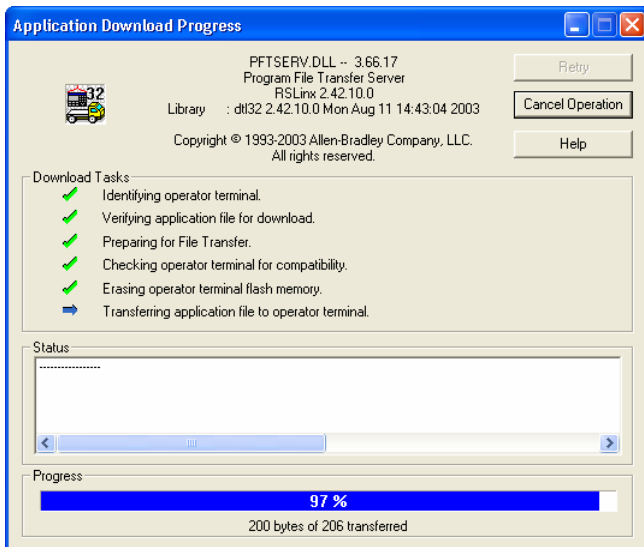
Field	Value
Application Name:	InView Network Communications
Transfer Type:	DF1 Point-to-Point -- Internal COM4

At the bottom right, there are four buttons: 'OK', 'Cancel', 'Setup', and 'Help'.

13. Click **Setup** and select the following settings.



14. Click **OK** twice and the download utility will launch. Once the download is complete, the transfer utility will close.



15. Click **Finish** and then click **Next** .

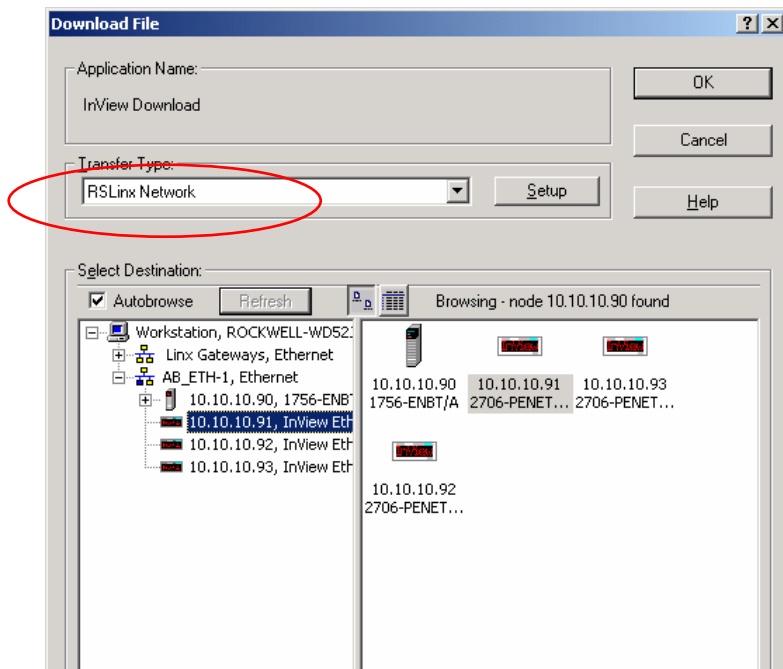
- Once all the desired messages are created, exit the message editor by closing the window (click the **X**). Note: messages are saved automatically in realtime – as soon as the text or attributes are changed the data base is updated.

Now let's download the message file that was just created to the InView.

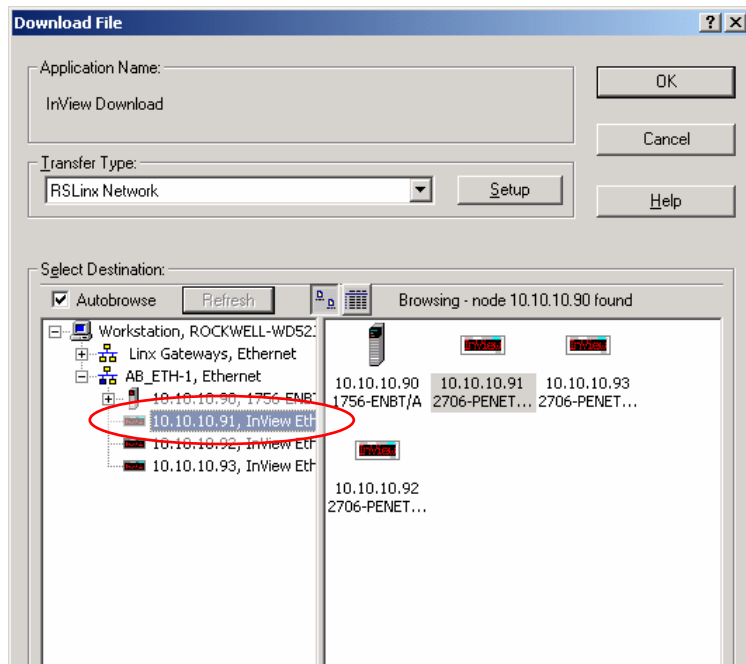
-
- The screenshot shows the 'InView Messaging Software - InView test3.IVP' window. The 'File' menu is open, displaying options such as 'Add Message File...', 'Duplicate Message file', 'Edit Message file...', 'Change Type...', 'Rename Message file...', 'Delete Message file', 'Associate Message file...', 'Download Message File...', and 'Broadcast Download...'. The 'Download Message File...' option is highlighted. In the background, a table titled 'Message Files' is visible, with columns for 'Message File', 'Display Type', and 'Partition Size'. The first row contains the text 'MessageFile', '2706-P42C', and '200'.

- [illegible]

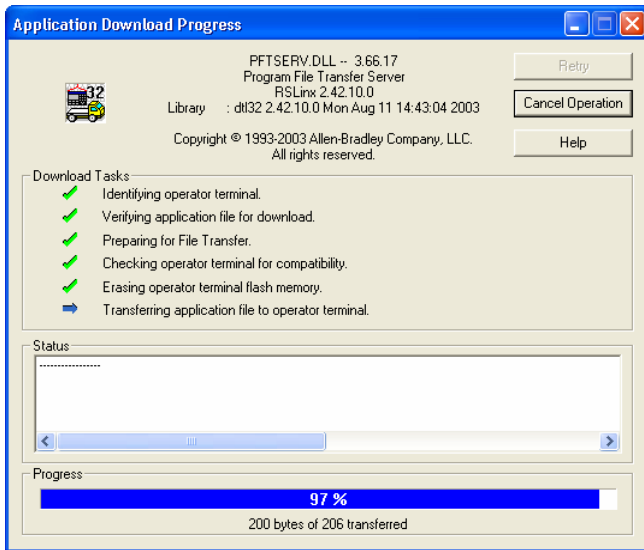
3. Select **RSLink Network** as the **Transfer Type** and the RSLink browse functionality will launch.



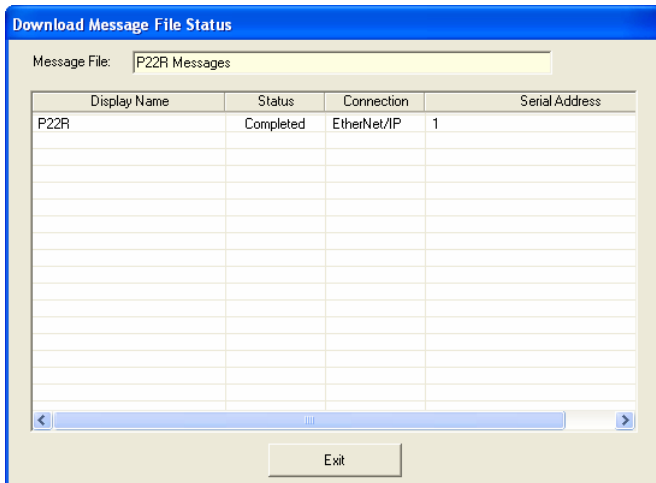
4. Browse for the 2706-PENET module that is connected to the InView display that you want to download to and select it – 10.10.10.91 in this example. Then click **OK** to download the message file.



5. The transfer utility will launch and show the progress of the tasks involved in the download.

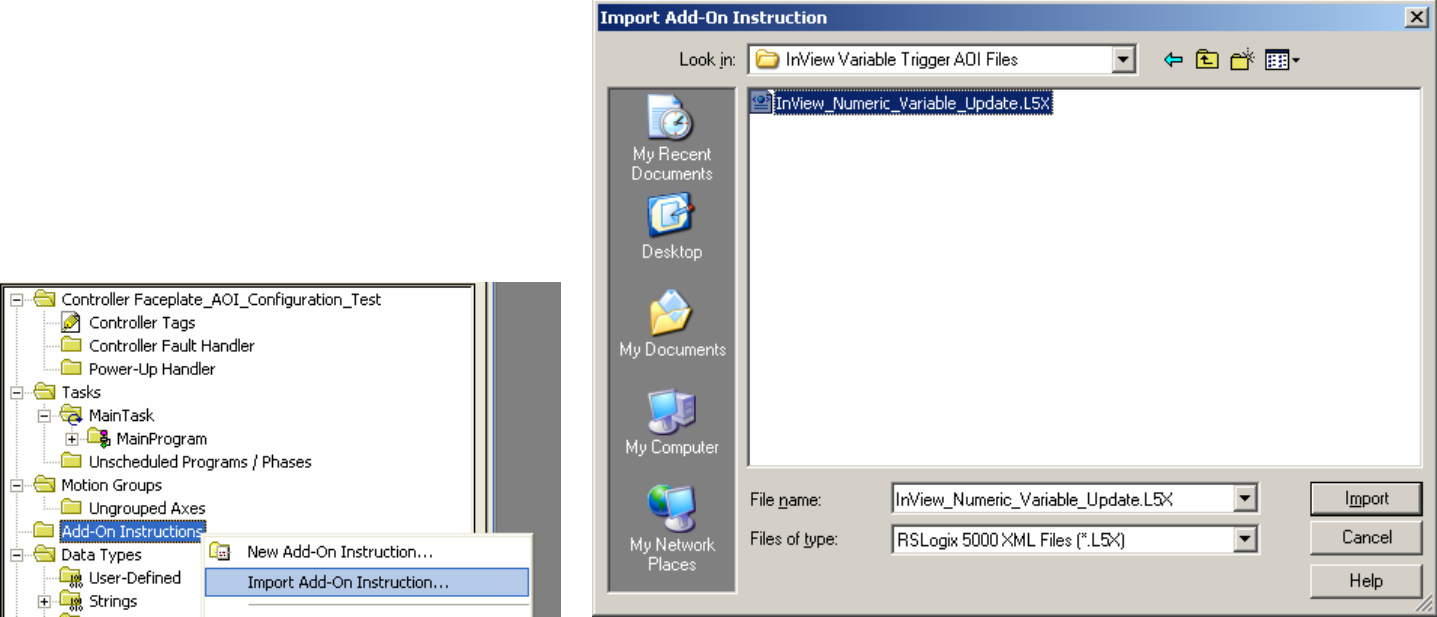


6. Once the download has completed, the transfer utility window will close and report a completed condition in the download message file status window. Click **Exit**.



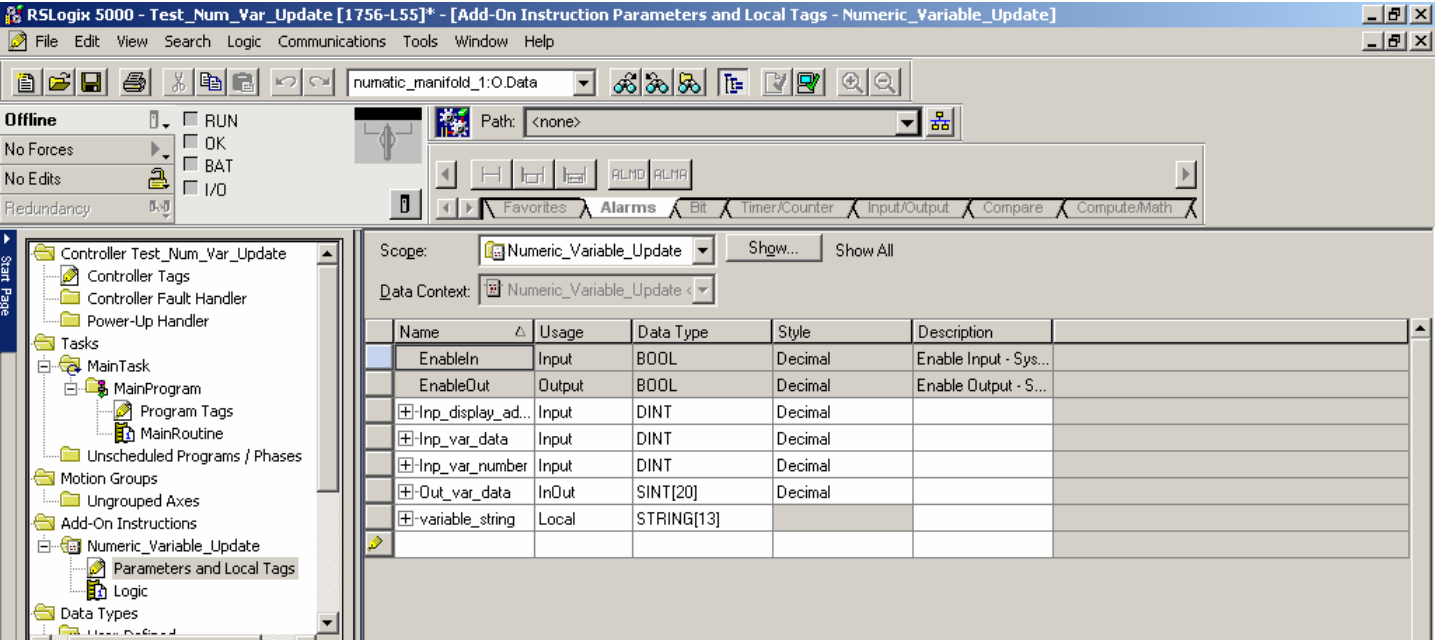
Step Three – Logix Configuration

- 1) Copy “InView Numeric Variable Update AOI Files” folder and contents onto your development P.C..
- 2) Open the existing ladder logic file with RSLogix5000 v16 or newer.
- 3) Import the “InView_Numeric_Variable_Update” add-on instruction.



- 4) Create Controller tags and assign the corresponding data types for the following AOI tags. The controller tags you create will be used to pass the data to the AOI. See the AOI Sample Code section for an example.

****NOTE**** Out_var_data is a SINT of size 20. The controller tag name you create for this AOI tag must be the same name as the Variable Data Address name that was assigned in Step 10 on page 7.



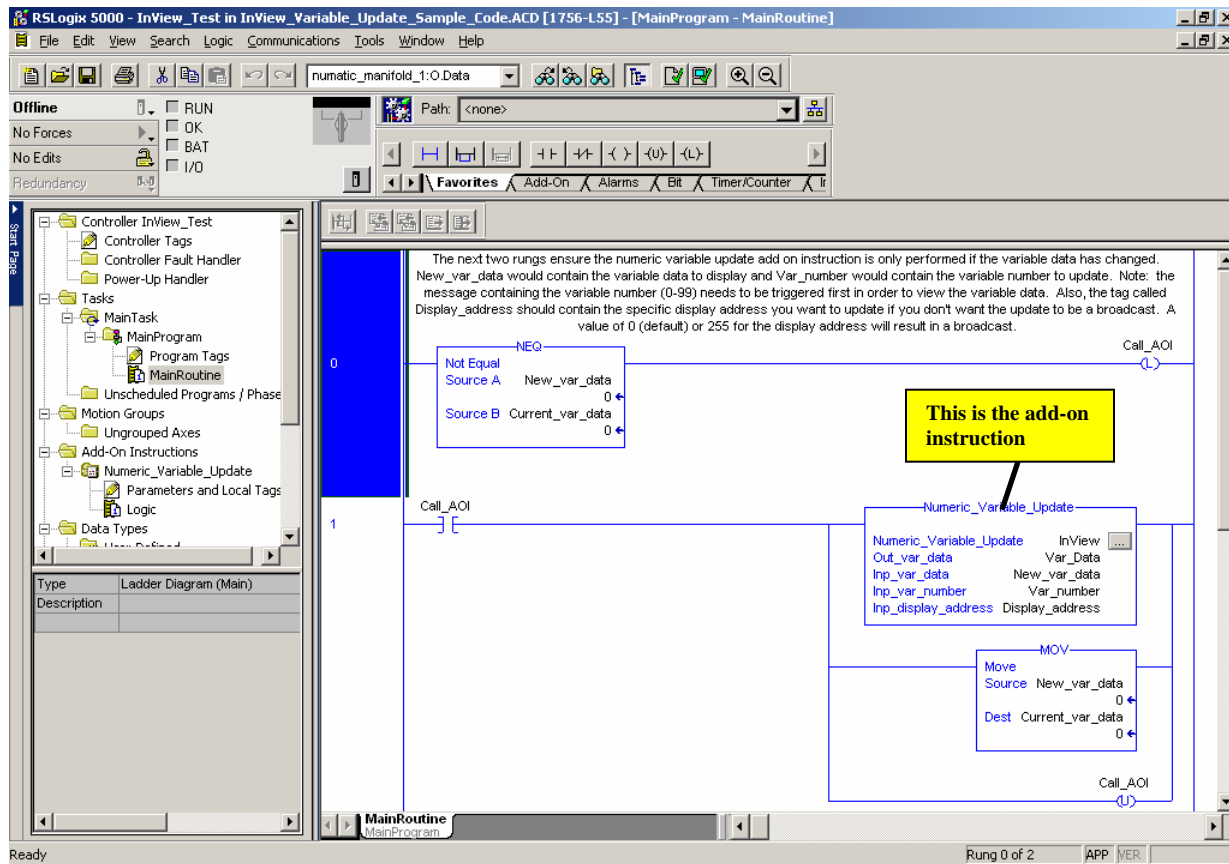
AOI Sample Code

Below is a screen shot of a sample ladder program that has been included with the InView Numeric Variable Update AOI files. The corresponding controller tags needed to pass the data to the AOI have already been created and are also shown below. The AOI will execute each time New_var_data receives new variable data to display. As an example, to update variable number 5 with variable data 275, on an InView with a serial address of 20, the main ladder would manipulate the following tags:

New_var_data = 275
Var_number = 5
Display_address = 20

For test purposes, one can just manually enter these values directly into the appropriate controller tags. Also, in order to view the variable data, the message containing the variable number, in this case 5, would need to be triggered first.

The AOI will write the InView string to Var_Data[1] and then change the state of Var_Data[0]. This will cause the string to be sent out of the serial port of the InView communication module. See Step One in this document for information regarding configuring the InView communication module.



Name	Value	Force Mask	Style	Data Type	Description
Call_AOI	0		Decimal	BOOL	
Current_var_data	0		Decimal	DINT	
Display_address	0		Decimal	DINT	
InView	{...}	{...}		Numeric_Variable...	
Msg_Data	{...}	{...}	Decimal	SINT[20]	
New_var_data	0		Decimal	DINT	
Var_Data	{...}	{...}	Decimal	SINT[20]	
Var_number	0		Decimal	DINT	

InView Message Trigger AOI User Configuration Instructions 08/15/07

System Compatibility

The add-on instruction file is compatible with:
RSLogix5000 V16 or later

NOTE: These instructions are for InView displays communicating over Ethernet/IP only. See 2706-UM017C-EN-P for information on configuring other networks. An additional communication module is required for Ethernet/IP.

2706-P22R

2706-P42

2706-P43

2706-P44

2706-P72C

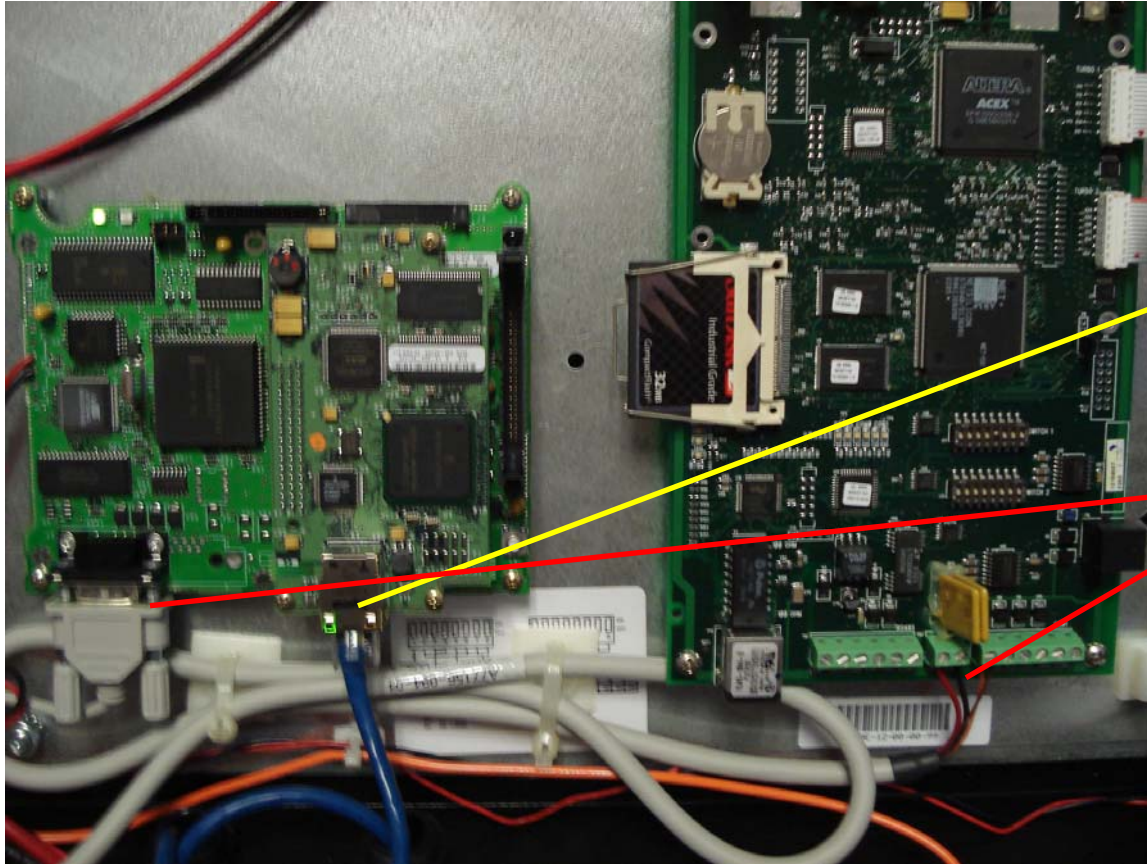
2706-P74C

2706-P92C

2706-P94C

Overview Section

Below is a photo showing connections for a 2706-PENETK to a 2706-P92C InView message display.



Ethernet
network
connection

Serial connection
to the InView.

Note: the serial
cable is provided
with the kit.

Figure 1. 2706-PENETK connections.

This AOI creates the InView protocol string needed to trigger a message, once the messages have been downloaded to the InView using InView Messaging Software. All that's needed is for the ladder logic to pass the message number to be displayed and the address of the display to the AOI. More detail is provided later in this document. A sample ladder logic file is included with this AOI zip package.

General Setup

The following instructions outline the steps, in order, that are necessary to successfully trigger messages on an InView message display.

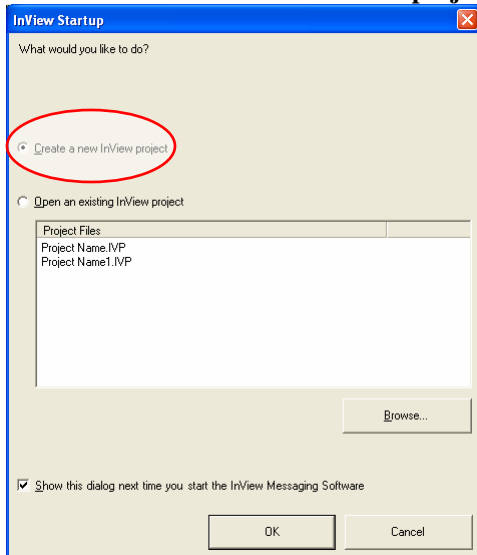
Step One – Configure the InView Communication Module

See the InView Communication Module user manual, 2706-UM017C-EN-P, for more information and instruction on how to setup the other protocols. Once the InView Messaging Software is launched, there will be a step by step process that will guide you through the project, display, and message file creation process.

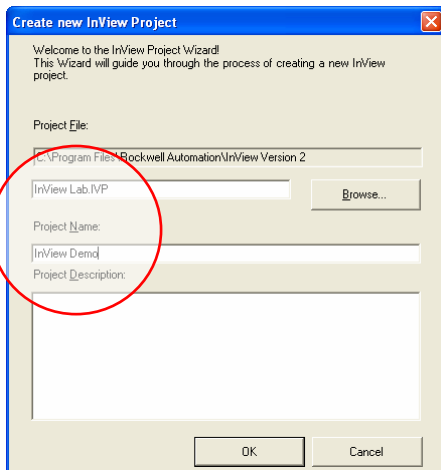
****NOTE** any selections or edits are automatically updated, there is no separate save feature.**

Go to **Start>Programs>Rockwell Automation>InView Software>InView Messaging Software** to start the InView Messaging Software. Once the InView Messaging Software has launched, you will be asked to either create a new project or open an existing one. We will create a new project.

1. Select the **Create a new InView project** radial button and click **OK**.



2. Enter a name for the **Project File** and for the **Project Name**. Click **OK**.



3. Select the display you are using from the **Display type** list. Enter a name for the display in the **Display name** field. Leave “1” as the number of displays required. Click **Next**.

Add Display - Identification - Step 1 of 3

Display name:
P22R

Display type:
2706-P22R

Number required:
1

Description:

Display Specification
Type: 2706-P22R
Dimensions: {Width=120, Height=7}
Colors: Red
Fonts: 5 High, 7 High, 7 Fancy

Cancel << Back Next >> Finish

Note: Description Field is used for more details regarding your display application such as; customer name, factory location or specifics of the display's use in your factory.

Next you will configure the type of communications between the display and the InView Messaging Software.

4. Select **Industrial Network Comms** and click the **Configure Communications** button under **Industrial Network Communications**.

Edit Display

Identification Communications Message File

Serial address: 1 Heartbeat: Disabled

Download Protocol:
☐ Serial ☐ Ethernet TCP/IP ☒ Industrial Network Comms

TCP/IP settings
Address: 192.168.1.100
Advanced... Configure Communications...

Serial port settings
COM port: COM1 Baud rate: 9600
Parity: None Data bits: 8
Stop bits: 1

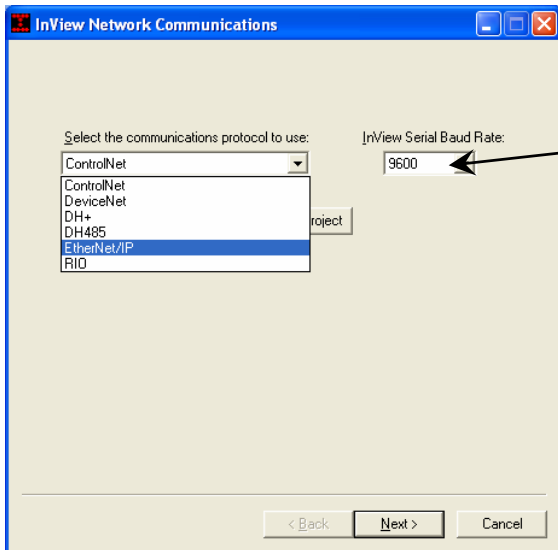
Industrial Network Communications
Protocol: None
Advanced... Configure Communications...

OK Cancel

Note: This section is used to select the type of communications the InView software on your PC will use to communicate to the InView

Note: These fields are used to configure communication on your InView display or communication module for use during runtime.

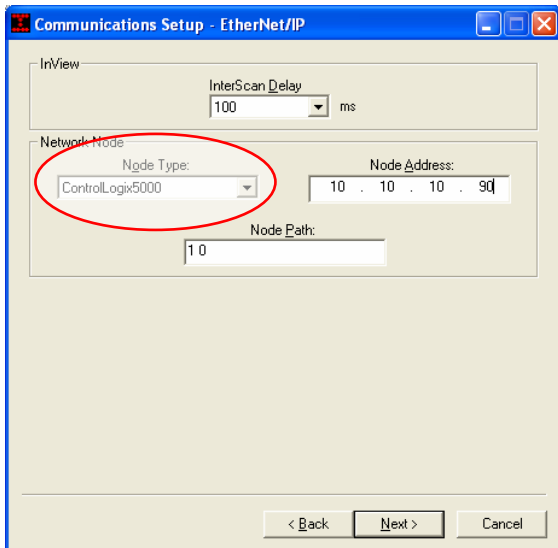
5. Select **EtherNet/IP** for the communications protocol and then click **Next**.



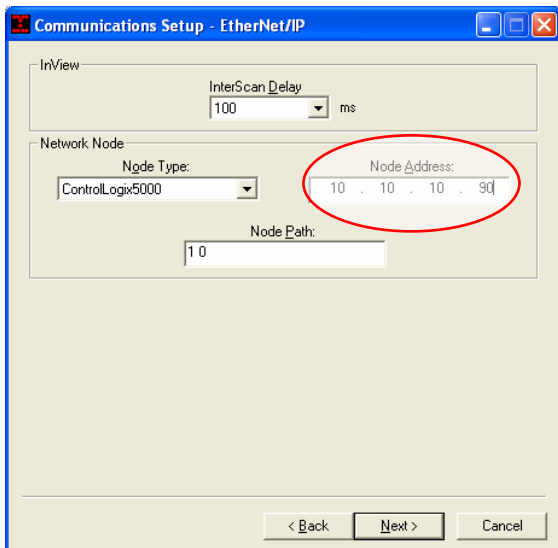
Note: **InView Serial Baud Rate** is the baud rate between the industrial communication module and your InView display. This should be set to 9600.

Now we will select the controller we are going to communicate with and its communications path.

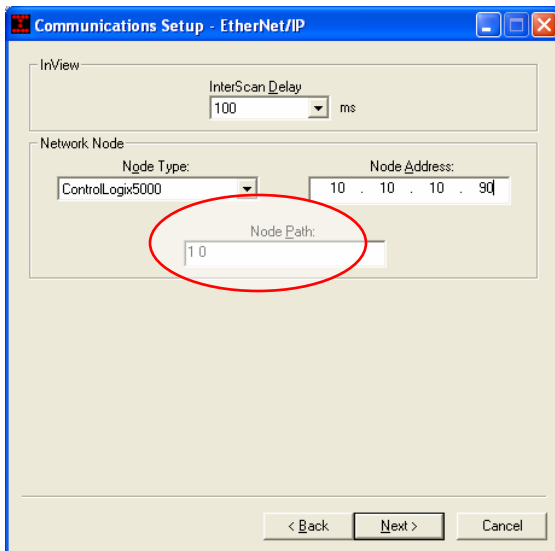
6. Select **ControlLogix5000** for the **Node Type**.



7. Enter the IP address of the Ethernet module in the ControlLogix chassis for the **Node Address**.



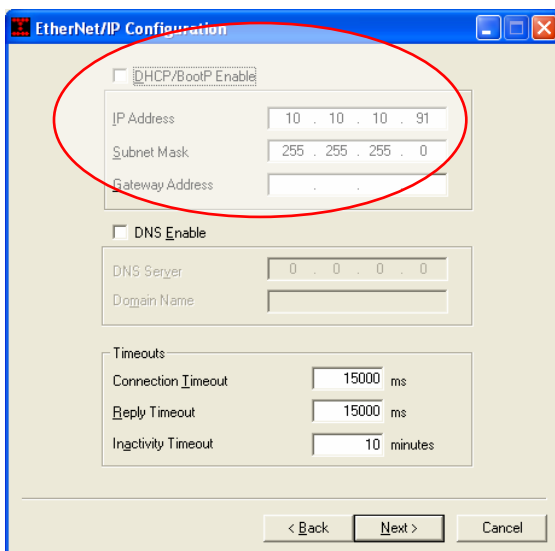
8. Enter the backplane address and the node address of the controller that will be communicating to the InView. Typically this is 'I' space '0' for the **Node Path**. Click **Next**.



The screenshot shows the 'Communications Setup - EtherNet/IP' window. It has a blue title bar and standard Windows window controls. The main area is divided into sections. The 'InView' section has an 'InterScan Delay' dropdown set to '100' ms. The 'Network Node' section contains a 'Node Type' dropdown set to 'ControlLogix5000', a 'Node Address' field with '10 . 10 . 10 . 90', and a 'Node Path' field with '1 0'. The 'Node Path' field is circled in red. At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

This step will set a static Ethernet configuration for the Ethernet IP communication Module.

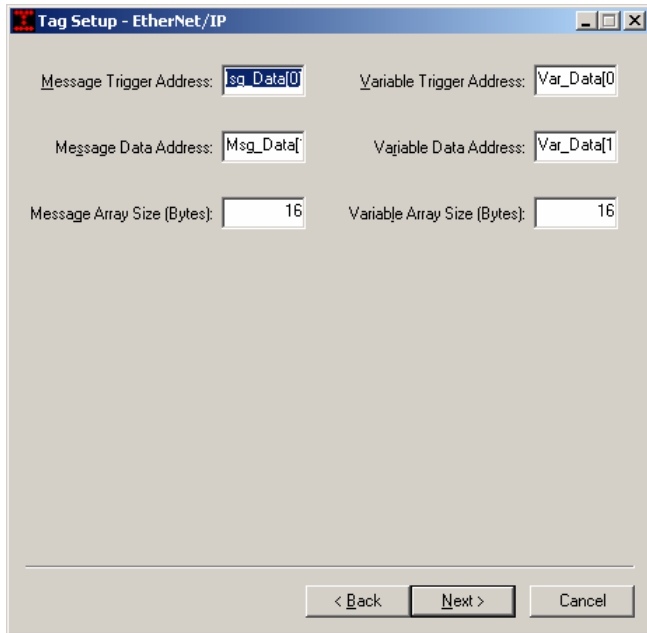
9. Uncheck **DHCP/BootP Enable** and enter the IP address you would like to assign to the communication module. Enter '255.255.255.0' for the **Subnet Mask**. Leave the **Gateway Address** blank and click **Next**.



The screenshot shows the 'EtherNet/IP Configuration' window. It has a blue title bar and standard Windows window controls. The main area contains several sections. The first section has a 'DHCP/BootP Enable' checkbox which is unchecked and circled in red. Below it are fields for 'IP Address' (10 . 10 . 10 . 91), 'Subnet Mask' (255 . 255 . 255 . 0), and 'Gateway Address' (blank). The second section has a 'DNS Enable' checkbox (unchecked) and fields for 'DNS Server' (0 . 0 . 0 . 0) and 'Domain Name' (blank). The third section is titled 'Timeouts' and contains 'Connection Timeout' (15000 ms), 'Reply Timeout' (15000 ms), and 'Inactivity Timeout' (10 minutes). At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

The following step specifies the tags within the controller that will contain the data and trigger values. Enter both the Message & Variable information.

10. Enter '**Msg_Data[0]**' for the **Message Trigger Address** and '**Msg_Data[1]**' for the **Message Data Address**. Enter '**Var_Data[0]**' for the **Variable Trigger Address** and '**Var_Data[1]**' for the **Variable Data Address**. Click **Next**.



The 'Tag Setup - EtherNet/IP' dialog box contains the following fields and values:

Field	Value
Message Trigger Address:	Msg_Data[0]
Variable Trigger Address:	Var_Data[0]
Message Data Address:	Msg_Data[1]
Variable Data Address:	Var_Data[1]
Message Array Size (Bytes):	16
Variable Array Size (Bytes):	16


At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Note:

Trigger Address: this is the address that the InView communication module is monitoring to know when to output the data located at the Data Address.

Data Address: This is the address that contains the InView protocol for either triggering a message or updating a variable.

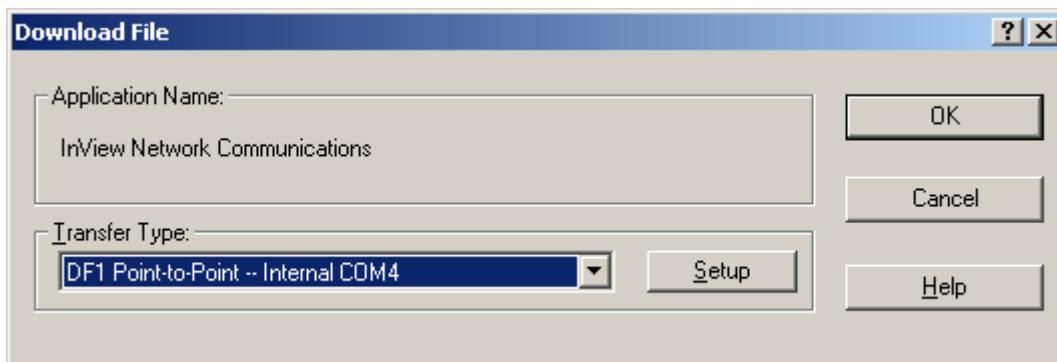
11. Click **Save to File** for future manipulation. Then click **Download to Module**.



The 'InView Network Communications' dialog box shows two buttons: 'Save to File' and 'Download to Module'. The 'Download to Module' button is circled in red. At the bottom, there are three buttons: '< Back', 'Finish', and 'Cancel'.

Note: Download of communication configuration for the first time is required to be performed serially.

12. Select DF1 Point-to-Point for the initial configuration download. Subsequent downloads can be done using RSLinx and the configured protocol.

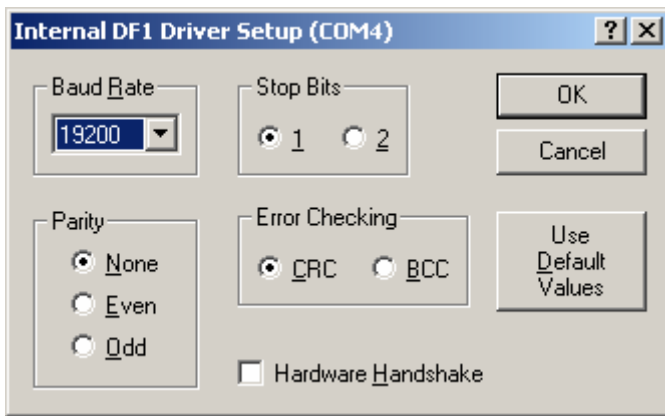


The 'Download File' dialog box contains the following fields and values:

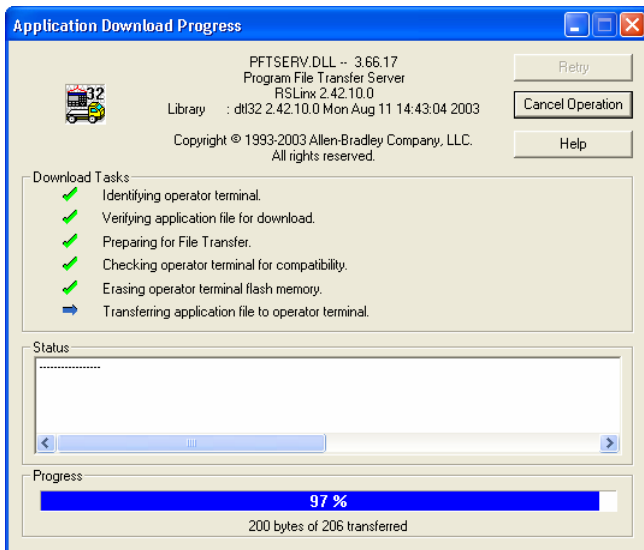
Field	Value
Application Name:	InView Network Communications
Transfer Type:	DF1 Point-to-Point -- Internal COM4

At the bottom right, there are four buttons: 'OK', 'Cancel', 'Setup', and 'Help'.

13. Click **Setup** and select the following settings.



14. Click **OK** twice and the download utility will launch. Once the download is complete, the transfer utility will close.



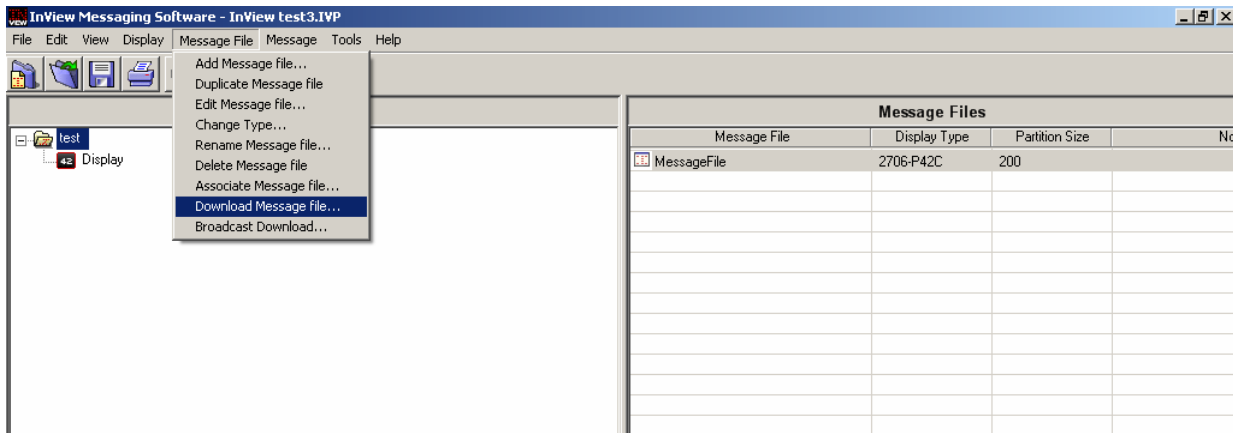
15. Click **Finish** and then click **Next** .

3. Once all the desired messages are created, exit the message editor by closing the window (click the **X**). Note: messages are saved automatically in realtime – as soon as the text or attributes are changed the data base is updated.

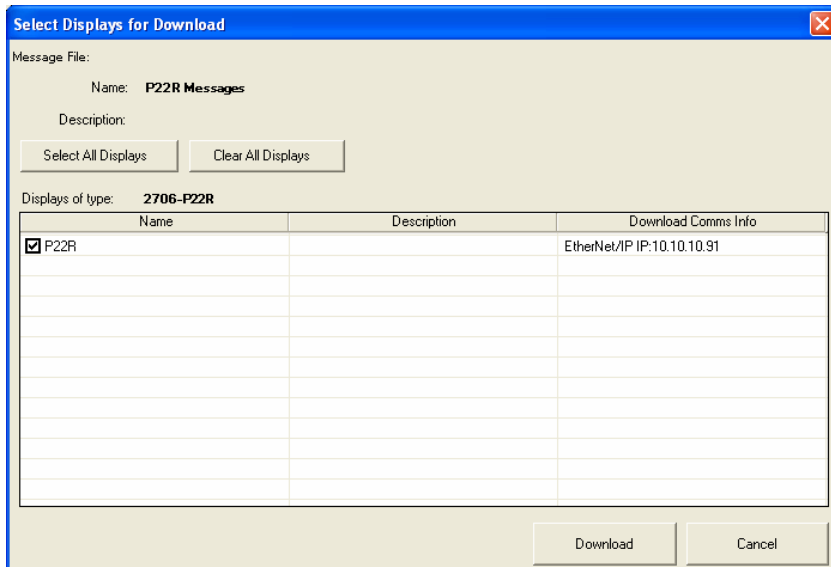
Downloading Messages

Now let's download the message file that was just created to the InView.

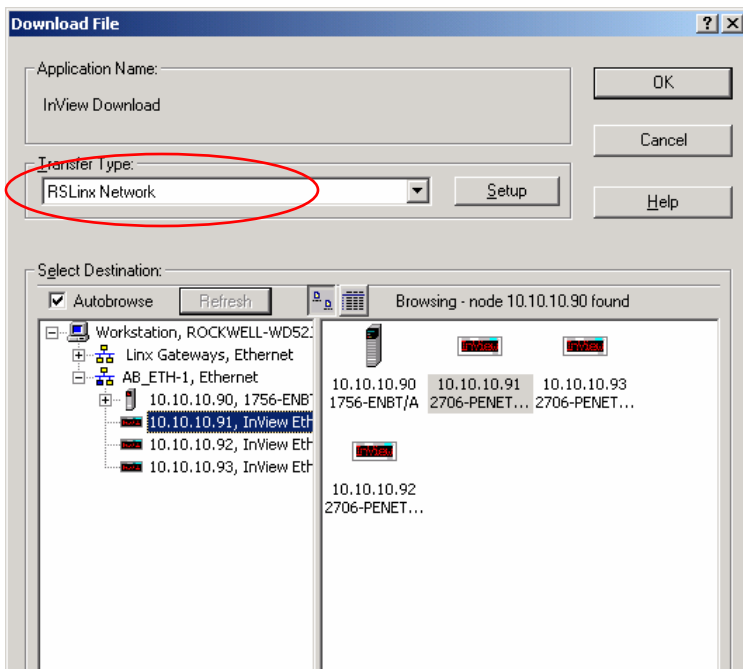
1. Select **Message File** and then **Download Message file** from the InView toolbar.



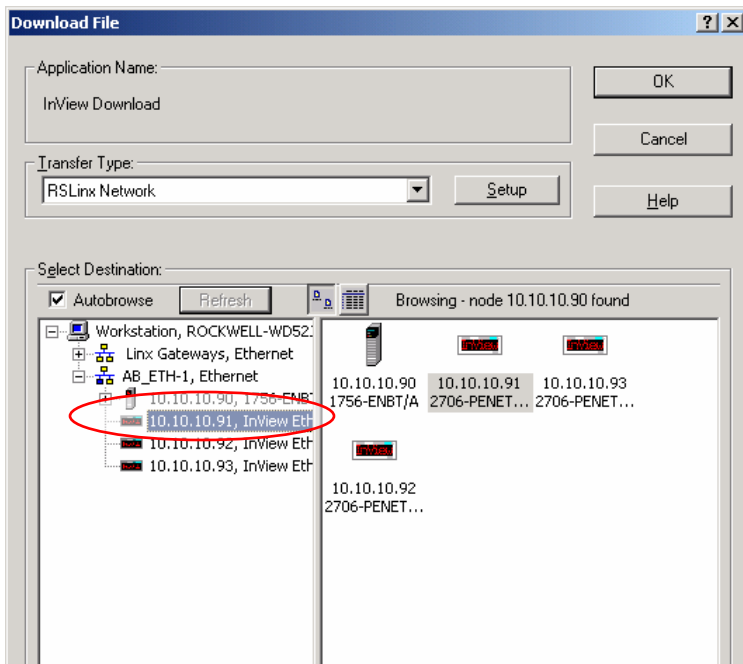
2. Ensure the InView to download to is checked for the display name and the **Download Comms Info** is correct – Ethernet/IP and the IP Address that was assigned in Step One, sub-step 9. Press the **Download** button.



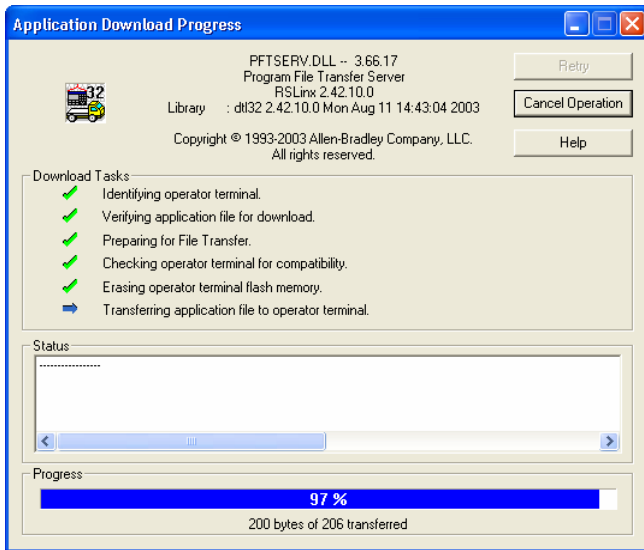
3. Select **RSLink Network** as the **Transfer Type** and the RSLink browse functionality will launch.



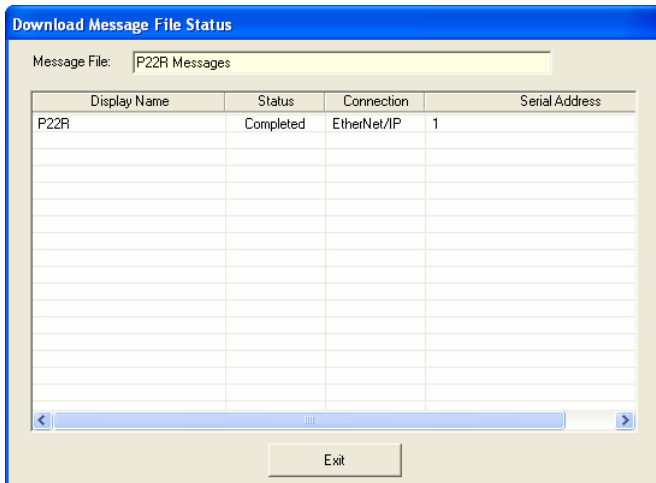
4. Browse for the 2706-PENET module that is connected to the InView display that you want to download to and select it – 10.10.10.91 in this example. Then click **OK** to download the message file.



5. The transfer utility will launch and show the progress of the tasks involved in the download.

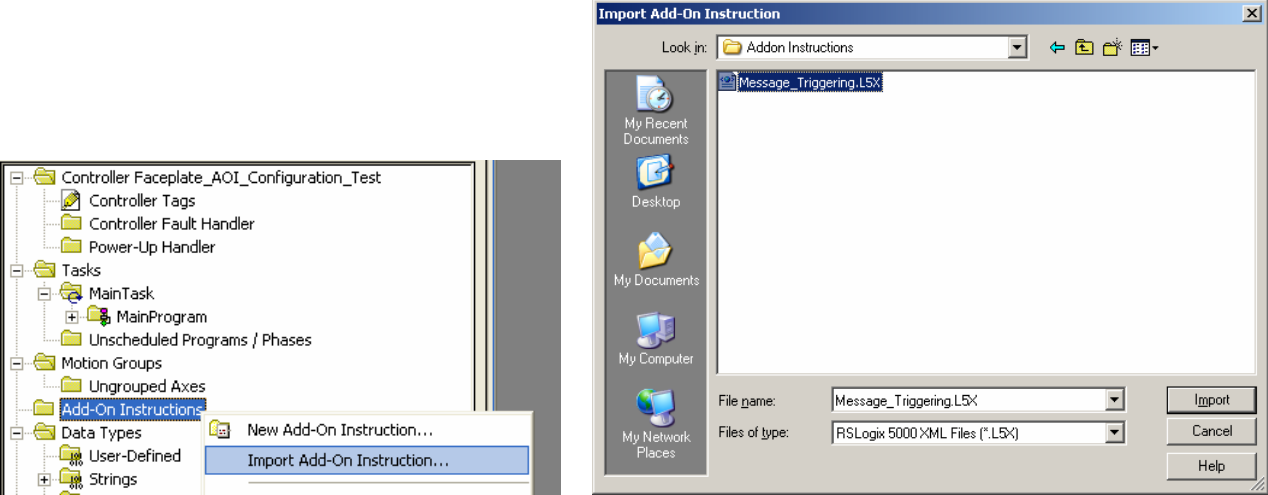


6. Once the download has completed, the transfer utility window will close and report a completed condition in the download message file status window. Click **Exit**.



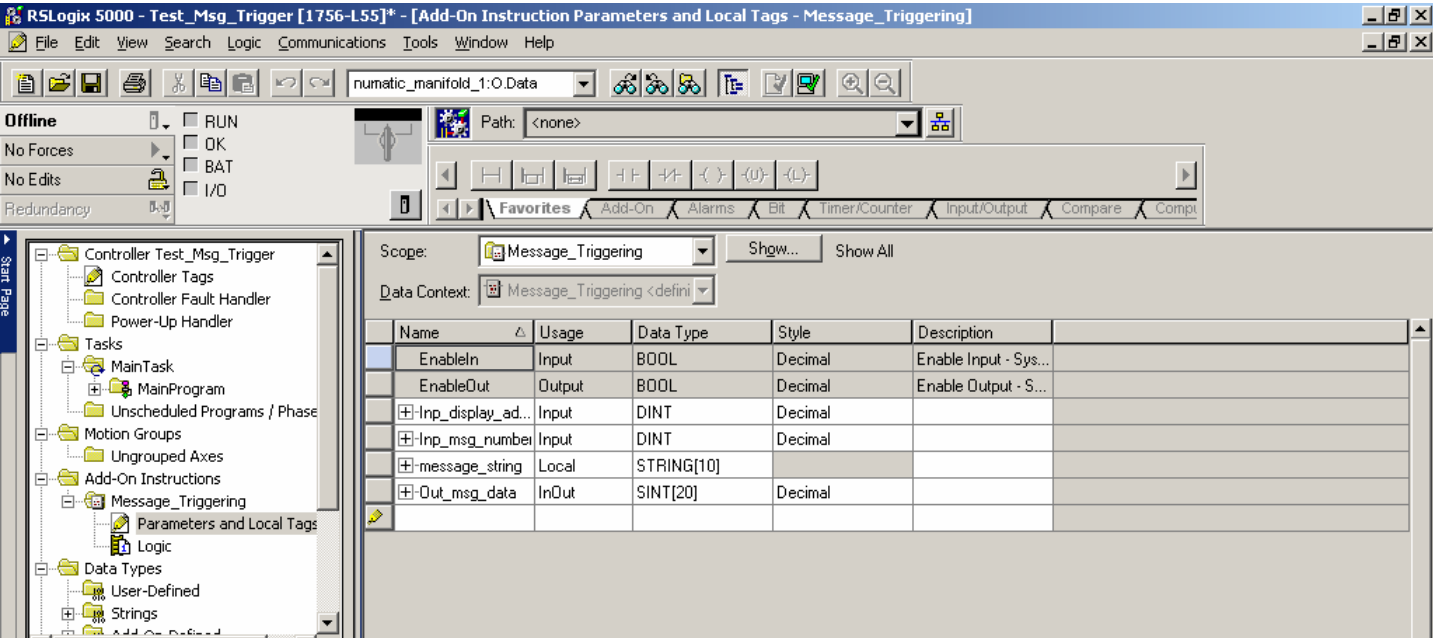
Step Three – Logix Configuration

- 1) Copy “InView Message Trigger AOI Files” folder and contents onto your development P.C..
- 2) Open the existing ladder logic file with RSLogix5000 v16 or newer.
- 3) Import the “Message_Triggering” add-on instruction.



- 4) Create Controller tags and assign the corresponding data types for the following AOI tags. The controller tags you create will be used to pass the data to the AOI. See the AOI Sample Code section for an example.

****NOTE**** Out_msg_data is a SINT of size 20. The controller tag name you create for this AOI tag must be the same name as the Message Data Address name that was assigned in Step 10 on page 7.



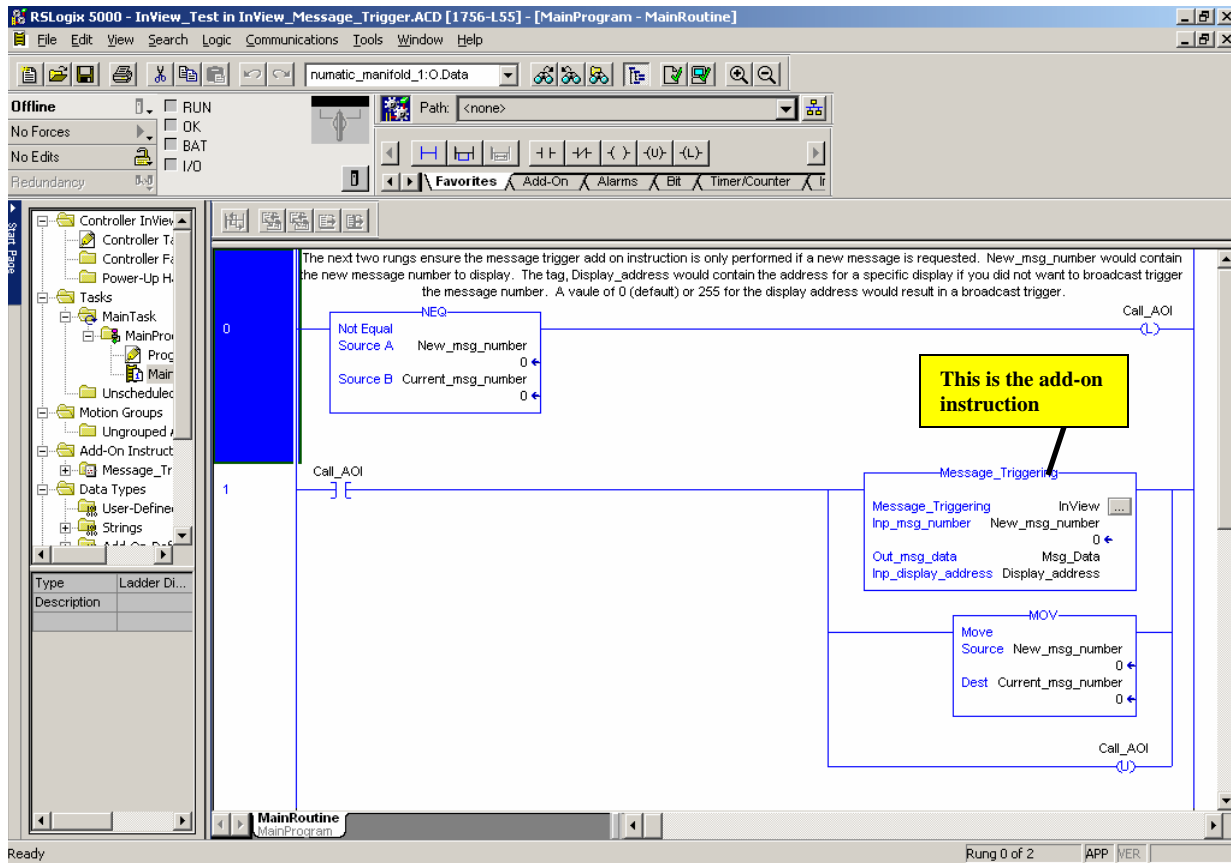
AOI Sample Code

Below is a screen shot of a sample ladder program that has been included with the InView Message Trigger AOI files. The corresponding controller tags needed to pass the data to the AOI have already been created and are also shown below. The AOI will execute each time New_msg_number receives a new message number to display. As an example, to trigger message number 5 on an InView with a serial address of 20, the main ladder would manipulate the following tags:

New_msg_number = 5
Display_address = 20

For test purposes, one can just manually enter these values directly into the appropriate controller tags.

The AOI will write the InView string to Msg_Data[1] and then change the state of Msg_Data[0]. This will cause the string to be sent out of the serial port of the InView communication module. See Step One in this document for information regarding configuring the InView communication module.



Name	Value	Force Mask	Style	Data Type	Description
Call_AOI	0		Decimal	BOOL	
Current_msg_number	0		Decimal	DINT	
Display_address	0		Decimal	DINT	
InView	{...}	{...}		Message_Triggering	
Msg_Data	{...}	{...}	Decimal	SINT[20]	
New_msg_number	0		Decimal	DINT	
Var_Data	{...}	{...}	Decimal	SINT[20]	

InView Alphanumeric Variable Update AOI User Configuration Instructions 08/15/07

System Compatibility

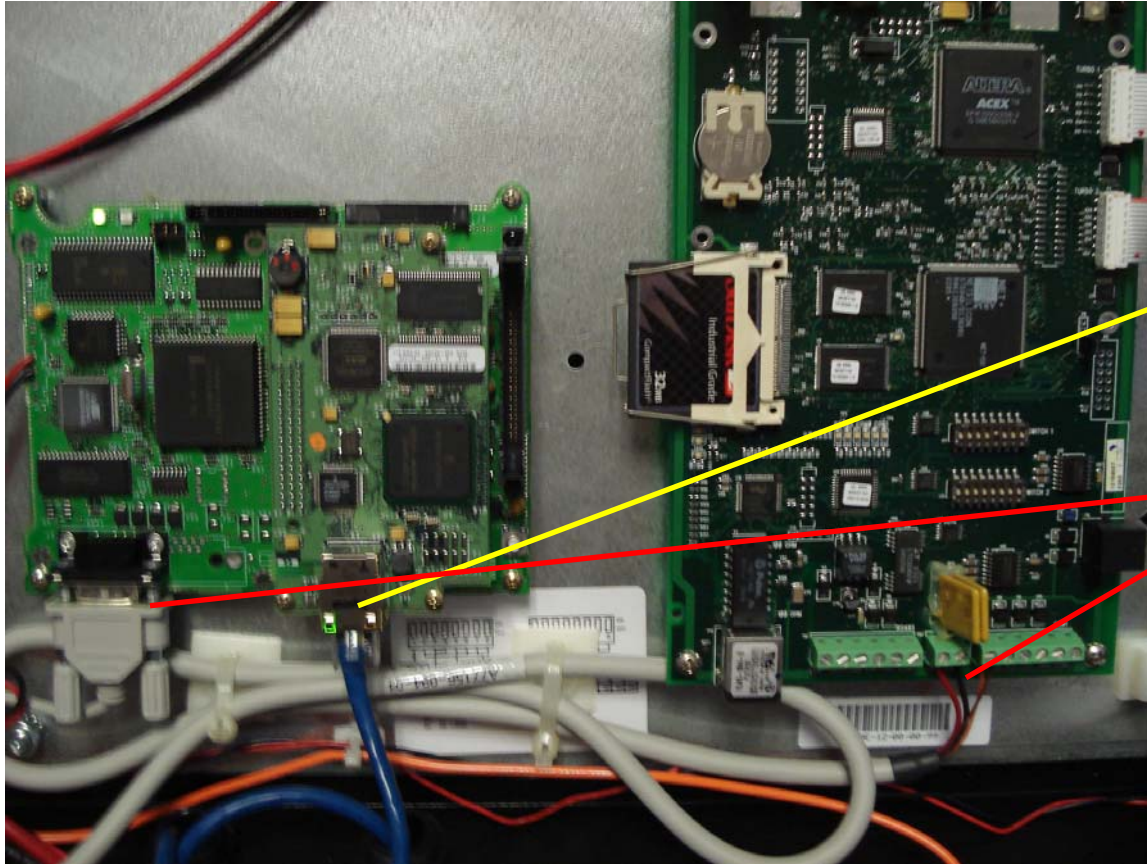
The add-on instruction file is compatible with:
RSLogix5000 V16 or later

NOTE: These instructions are for InView displays communicating over Ethernet/IP only. See 2706-UM017C-EN-P for information on configuring other networks. An additional communication module is required for Ethernet/IP.

2706-P22R
2706-P42
2706-P43
2706-P44
2706-P72C
2706-P74C
2706-P92C
2706-P94C

Overview Section

Below is a photo showing connections for a 2706-PENETK to a 2706-P92C InView message display.



Ethernet
network
connection

Serial connection
to the InView.

Note: the serial
cable is provided
with the kit.

Figure 1. 2706-PENETK connections.

This AOI creates the InView protocol string needed to update an alphanumeric variable, once the messages have been downloaded to the InView using InView Messaging Software. All that's needed is for the ladder logic to pass the variable number, alphanumeric variable data, and the address of the display to the AOI. More detail is provided later in this document. A sample ladder logic file is included with this AOI zip package.

General Setup

The following instructions outline the steps, in order, that are necessary to successfully trigger messages on an InView message display.

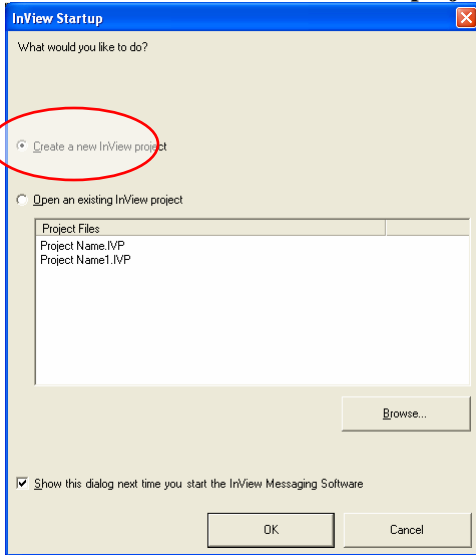
Step One – Configure the InView Communication Module

See the InView Communication Module user manual, 2706-UM017C-EN-P, for more information and instruction on how to setup the other protocols. Once the InView Messaging Software is launched, there will be a step by step process that will guide you through the project, display, and message file creation process.

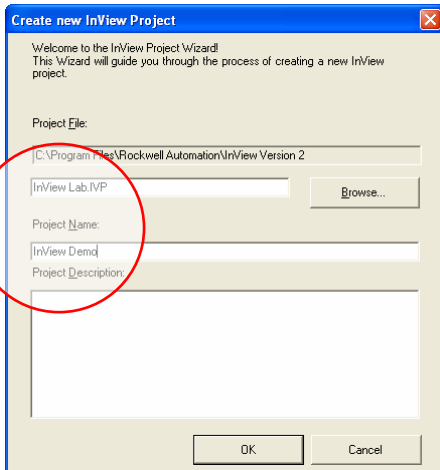
****NOTE** any selections or edits are automatically updated, there is no separate save feature.**

Go to **Start>Programs>Rockwell Automation>InView Software>InView Messaging Software** to start the InView Messaging Software. Once the InView Messaging Software has launched, you will be asked to either create a new project or open an existing one. We will create a new project.

1. Select the **Create a new InView project** radial button and click **OK**.



2. Enter a name for the **Project File** and for the **Project Name**. Click **OK**.



3. Select the display you are using from the **Display type** list. Enter a name for the display in the **Display name** field. Leave “1” as the number of displays required. Click **Next**.

Add Display - Identification - Step 1 of 3

Display name:
P22R

Display type:
2706-P22R

Number required:
1

Description:

Display Specification
Type: 2706-P22R
Dimensions: {Width=120, Height=7}
Colors: Red
Fonts: 5 High, 7 High, 7 Fancy

Cancel << Back Next >> Finish

Note: Description Field is used for more details regarding your display application such as; customer name, factory location or specifics of the display's use in your factory.

Next you will configure the type of communications between the display and the InView Messaging Software.

4. Select **Industrial Network Comms** and click the **Configure Communications** button under **Industrial Network Communications**.

Edit Display

Identification Communications Message File

Serial address: 1 Heartbeat: Disabled

Download Protocol:
☐ Serial ☐ Ethernet TCP/IP ☒ Industrial Network Comms

TCP/IP settings
Address: 192.168.1.100
Advanced... Configure Communications...

Serial port settings
COM port: COM1 Baud rate: 9600
Parity: None Data bits: 8
Stop bits: 1

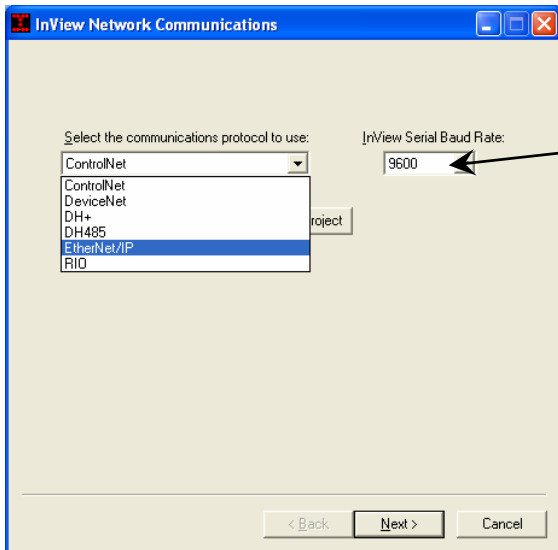
Industrial Network Communications
Protocol: None
Advanced... Configure Communications...

OK Cancel

Note: This section is used to select the type of communications the InView software on your PC will use to communicate to the InView

Note: These fields are used to configure communication on your InView display or communication module for use during runtime.

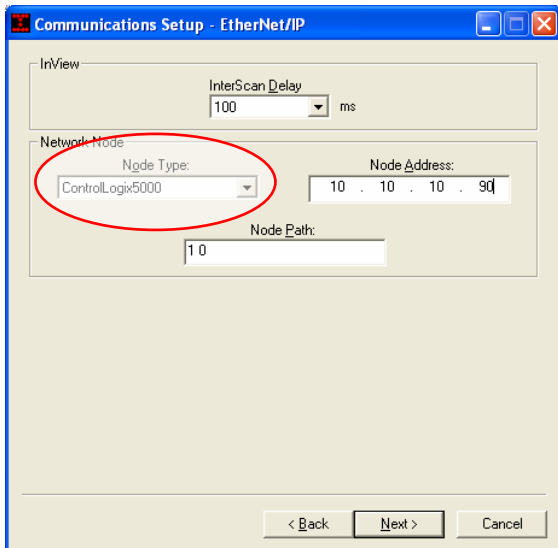
5. Select **EtherNet/IP** for the communications protocol and then click **Next**.



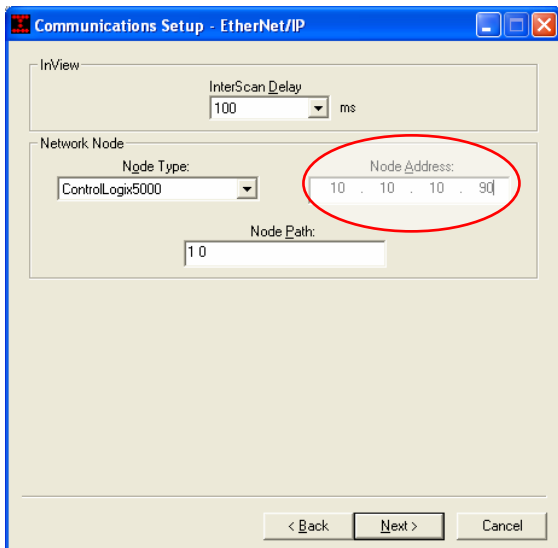
Note: **InView Serial Baud Rate** is the baud rate between the industrial communication module and your InView display. This should be set to 9600.

Now we will select the controller we are going to communicate with and its communications path.

6. Select **ControlLogix5000** for the **Node Type**.



7. Enter the IP address of the Ethernet module in the ControlLogix chassis for the **Node Address**.



8. Enter the backplane address and the node address of the controller that will be communicating to the InView. Typically this is 'I' space '0' for the **Node Path**. Click **Next**.

The screenshot shows the 'Communications Setup - EtherNet/IP' window. It has a blue title bar and standard Windows window controls. The 'InView' section contains an 'InterScan Delay' dropdown set to '100' ms. The 'Network Node' section has a 'Node Type' dropdown set to 'ControlLogix5000', a 'Node Address' field with '10 . 10 . 10 . 90', and a 'Node Path' field with '1 0' circled in red. At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

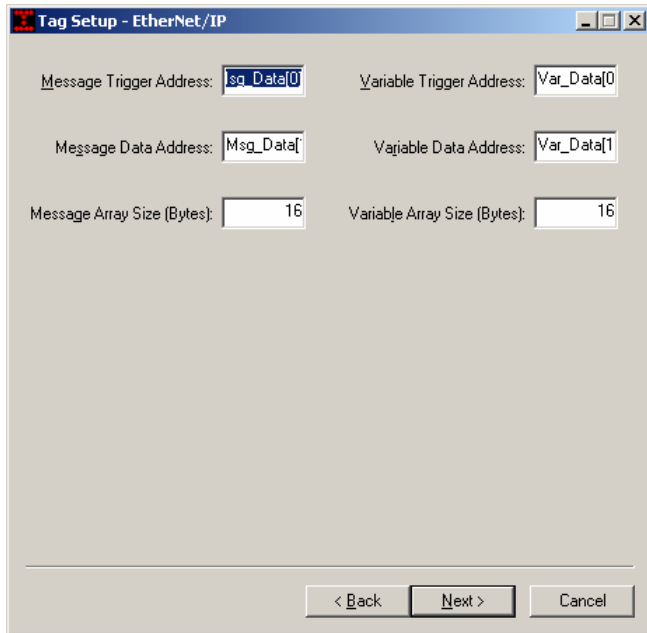
This step will set a static Ethernet configuration for the Ethernet IP communication Module.

9. Uncheck **DHCP/BootP Enable** and enter the IP address you would like to assign to the communication module. Enter '255.255.255.0' for the **Subnet Mask**. Leave the **Gateway Address** blank and click **Next**.

The screenshot shows the 'EtherNet/IP Configuration' window. It has a blue title bar and standard Windows window controls. The 'DHCP/BootP Enable' checkbox is circled in red and is unchecked. Below it are fields for 'IP Address' (10 . 10 . 10 . 91), 'Subnet Mask' (255 . 255 . 255 . 0), and 'Gateway Address' (blank). The 'DNS Enable' checkbox is also unchecked, with fields for 'DNS Server' (0 . 0 . 0 . 0) and 'Domain Name' (blank). The 'Timeouts' section has 'Connection Timeout' (15000 ms), 'Reply Timeout' (15000 ms), and 'Inactivity Timeout' (10 minutes). At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

The following step specifies the tags within the controller that will contain the data and trigger values. Enter both the Message & Variable information.

10. Enter 'Msg_Data[0]' for the **Message Trigger Address** and 'Msg_Data[1]' for the **Message Data Address**. Enter 'Var_Data[0]' for the **Variable Trigger Address** and 'Var_Data[1]' for the **Variable Data Address**. Click **Next**.



The 'Tag Setup - EtherNet/IP' dialog box contains the following fields and values:

Field	Value
Message Trigger Address:	Msg_Data[0]
Variable Trigger Address:	Var_Data[0]
Message Data Address:	Msg_Data[1]
Variable Data Address:	Var_Data[1]
Message Array Size (Bytes):	16
Variable Array Size (Bytes):	16

At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Note:

Trigger Address: this is the address that the InView communication module is monitoring to know when to output the data located at the Data Address.

Data Address: This is the address that contains the InView protocol for either triggering a message or updating a variable.

The Message Array Size & the Variable Array Size have to match. This value may need to increase depending on how large the variable data is.

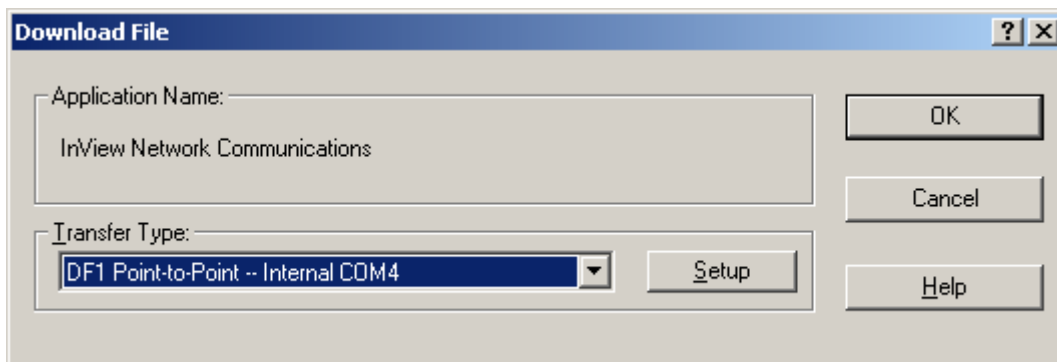
11. Click **Save to File** for future manipulation. Then click **Download to Module**.



The 'InView Network Communications' dialog box shows two buttons: 'Save to File' and 'Download to Module'. The 'Download to Module' button is circled in red. At the bottom, there are three buttons: '< Back', 'Finish', and 'Cancel'.

Note: Download of communication configuration for the first time is required to be performed serially.

12. Select DF1 Point-to-Point for the initial configuration download. Subsequent downloads can be done using RSLinx and the configured protocol.

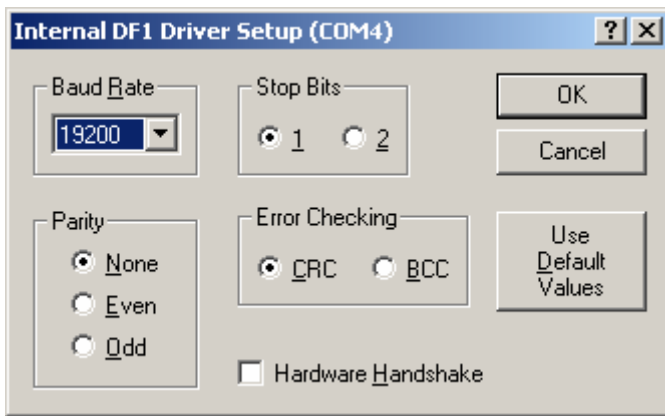


The 'Download File' dialog box contains the following fields and values:

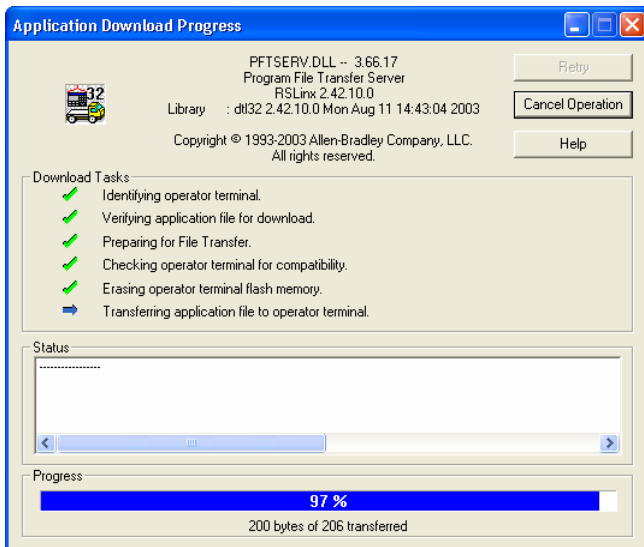
Field	Value
Application Name:	InView Network Communications
Transfer Type:	DF1 Point-to-Point -- Internal COM4

At the bottom right, there are four buttons: 'OK', 'Cancel', 'Setup', and 'Help'.

13. Click **Setup** and select the following settings.



14. Click **OK** twice and the download utility will launch. Once the download is complete, the transfer utility will close.



15. Click **Finish** and then click **Next**.

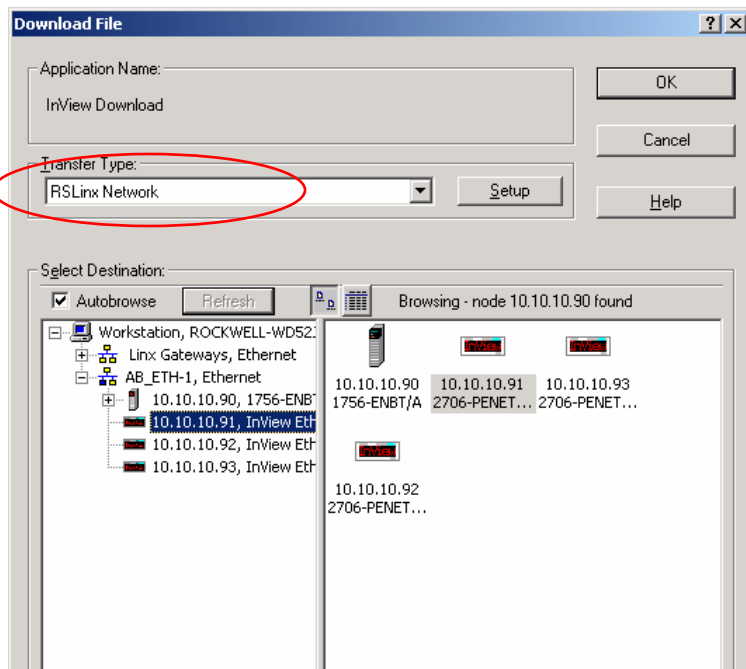
3. Once all the desired messages are created, exit the message editor by closing the window (click the **X**). Note: messages are saved automatically in realtime – as soon as the text or attributes are changed the data base is updated.

Now let's download the message file that was just created to the InView.

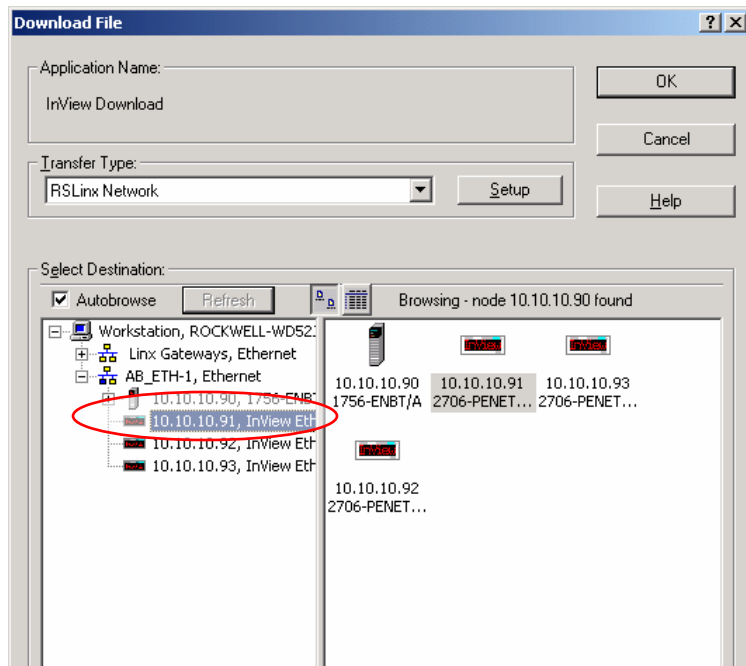
-
- The screenshot shows the 'InView Messaging Software - InView test3.IVP' window. The 'File' menu is open, displaying options such as 'Add Message File...', 'Duplicate Message file', 'Edit Message file...', 'Change Type...', 'Rename Message file...', 'Delete Message file', 'Associate Message file...', 'Download Message File...', and 'Broadcast Download...'. The 'Download Message File...' option is highlighted. In the background, a table titled 'Message Files' is visible, with columns for 'Message File', 'Display Type', and 'Partition Size'. The first row contains the text 'MessageFile', '2706-P42C', and '200'.

- [illegible]

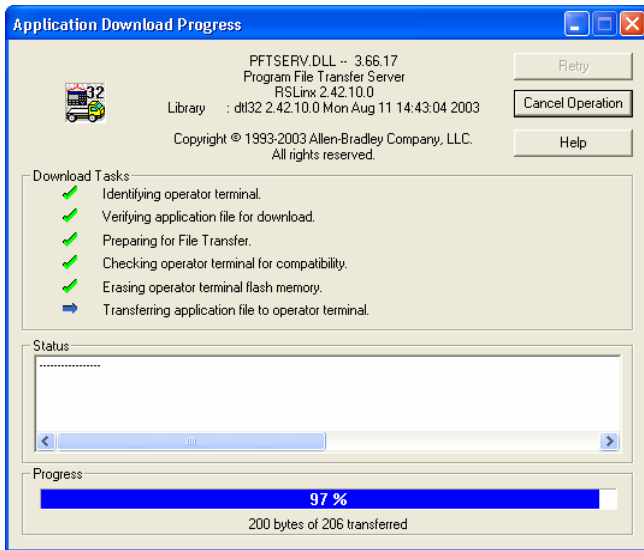
3. Select **RSLinx Network** as the **Transfer Type** and the RSLinx browse functionality will launch.



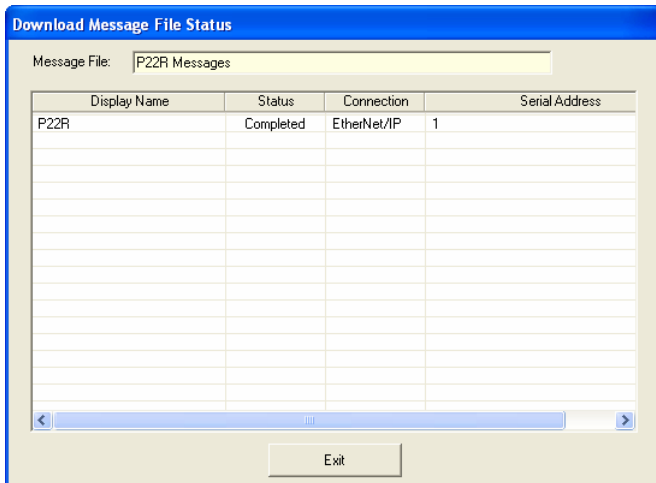
4. Browse for the 2706-PENET module that is connected to the InView display that you want to download to and select it – 10.10.10.91 in this example. Then click **OK** to download the message file.



5. The transfer utility will launch and show the progress of the tasks involved in the download.

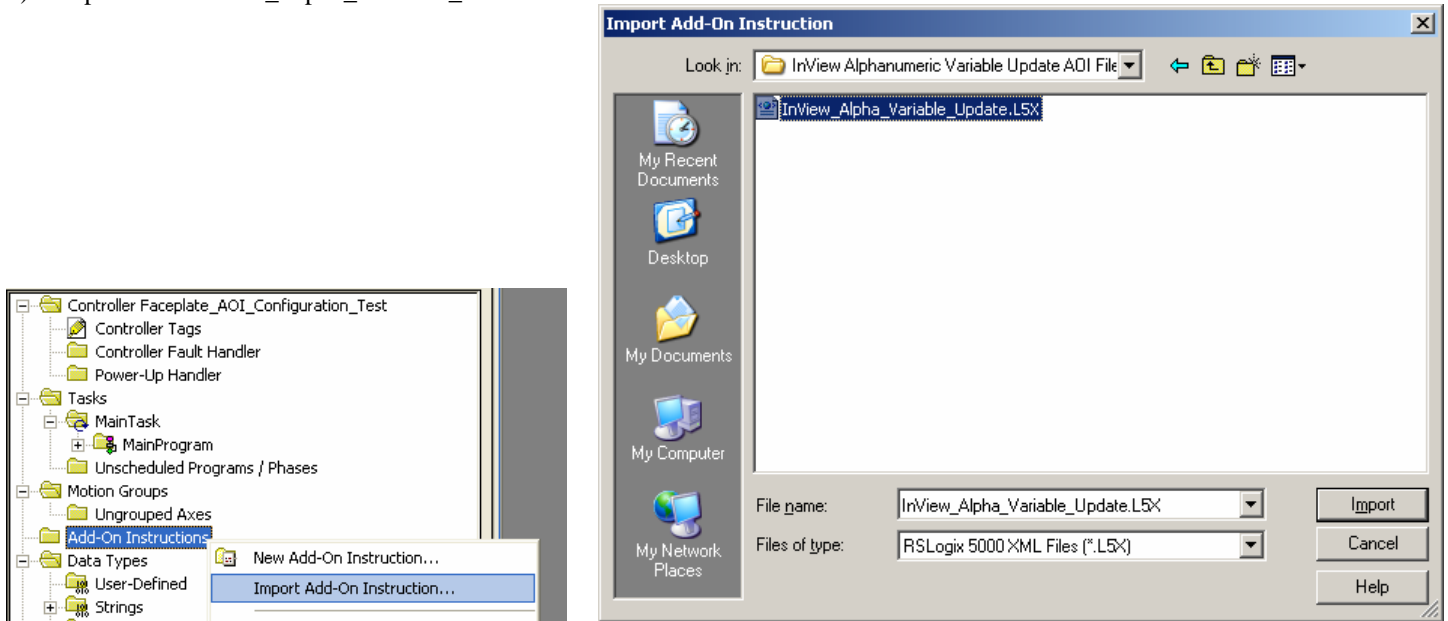


6. Once the download has completed, the transfer utility window will close and report a completed condition in the download message file status window. Click **Exit**.



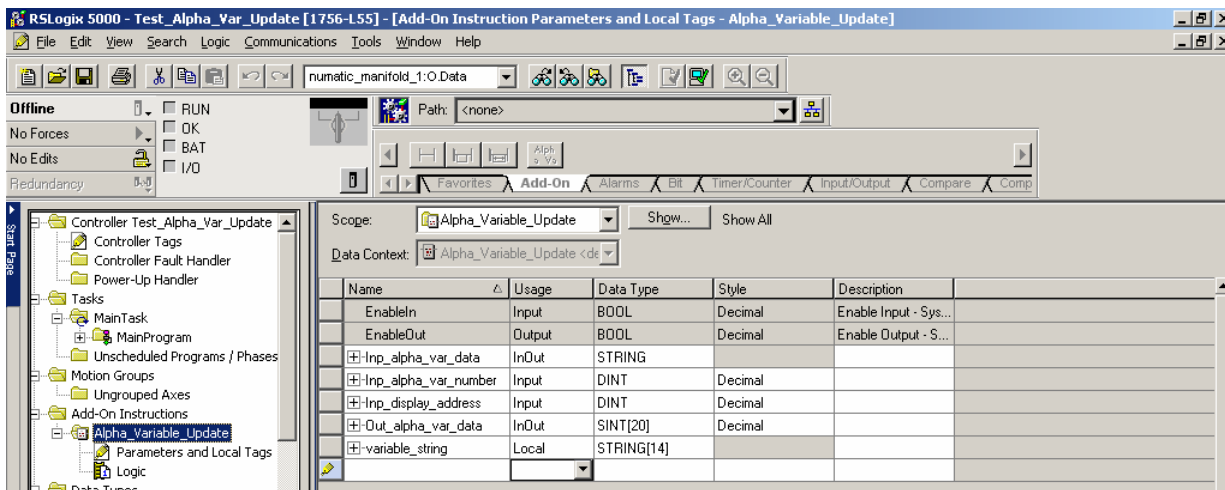
Step Three – Logix Configuration

- 1) Copy “InView Alphanumeric Update AOI Files” folder and contents onto your development P.C..
- 2) Open the existing ladder logic file with RSLogix5000 v16 or newer.
- 3) Import the “InView_Alpha_Variable_Update” add-on instruction.



- 4) Create Controller tags and assign the corresponding data types for the following AOI tags. The controller tags you create will be used to pass the data to the AOI. See the AOI Sample Code section for an example.

****Note**** Out_alpha_var_data is a SINT of size 20 (this should allow for a variable size of 10 bytes). The controller tag name you create for this AOI tag must be the same name as the Variable Data Address name that was assigned in Step 10 on page 7.



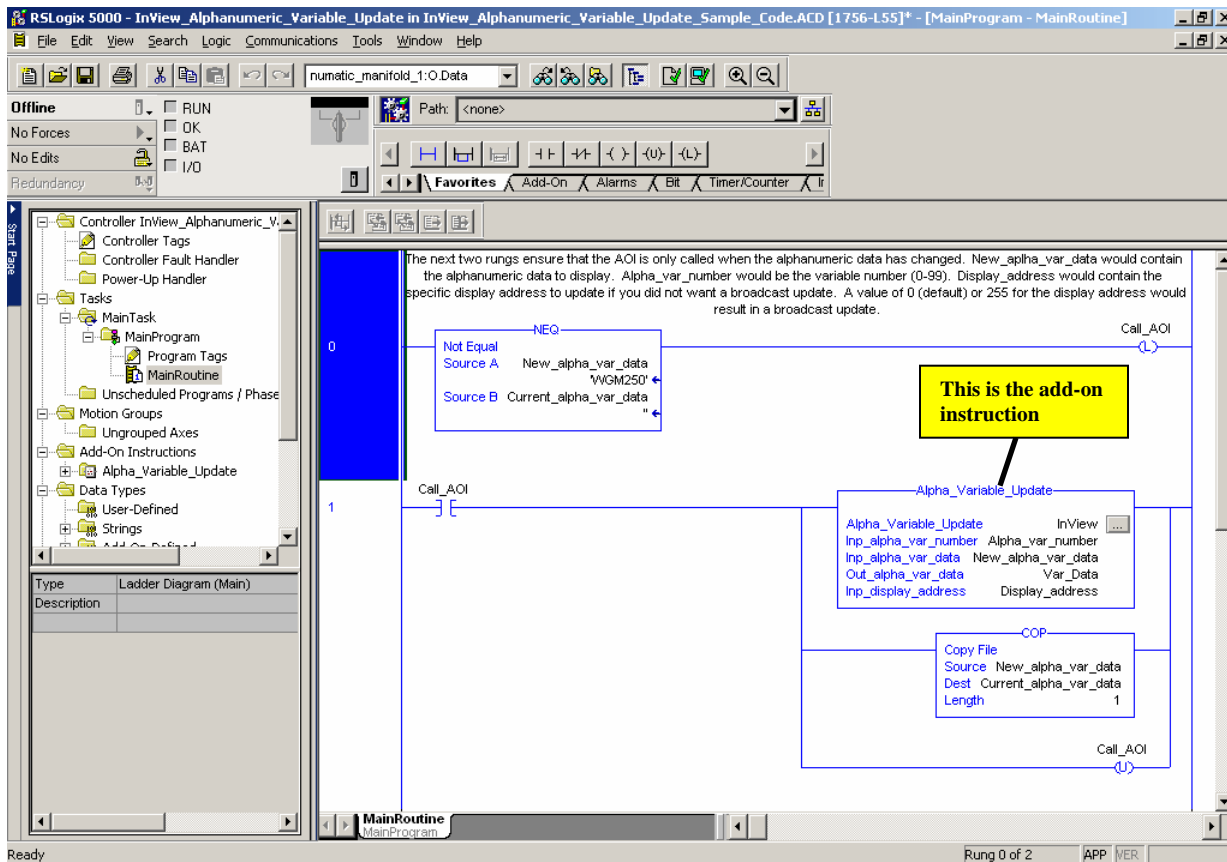
AOI Sample Code

Below is a screen shot of a sample ladder program that has been included with the InView Alpha Variable Update AOI files. The corresponding controller tags needed to pass the data to the AOI have already been created and are also shown below. The AOI will execute each time New_alpha_var_data receives new alphanumeric data to display. As an example, to update variable number 5 with alphanumeric data WGM250 on an InView with a serial address of 20, the main ladder would manipulate the following tags:

```
Alpha_var_number = 5
New_alpha_var_data = WGM250
Display_address = 20
```

For test purposes, one can just manually enter these values directly into the appropriate controller tags. Also, in order to view the updated variable data, the message containing the variable number to be updated must be triggered first.

The AOI will write the InView string to Var_Data[1] and then change the state of Var_Data[0]. This will cause the string to be sent out of the serial port of the InView communication module. See Step One in this document for information regarding configuring the InView communication module.



Name	Value	Force Mask	Style	Data Type	Description
Alpha_var_number	1		Decimal	DINT	
Call_AOI	0		Decimal	BOOL	
Current_alpha_var_data		{...}		STRING	
Display_address	0		Decimal	DINT	
InView	{...}	{...}		Alpha_Variable_U...	
Msg_Data	{...}	{...}	Decimal	SINT[51]	
New_alpha_var_data	'WGM250'	{...}		STRING	
Var_Data	{...}	{...}	Decimal	SINT[51]	

InView Advanced Message Download AOI User Configuration Instructions 08/21/07

System Compatibility

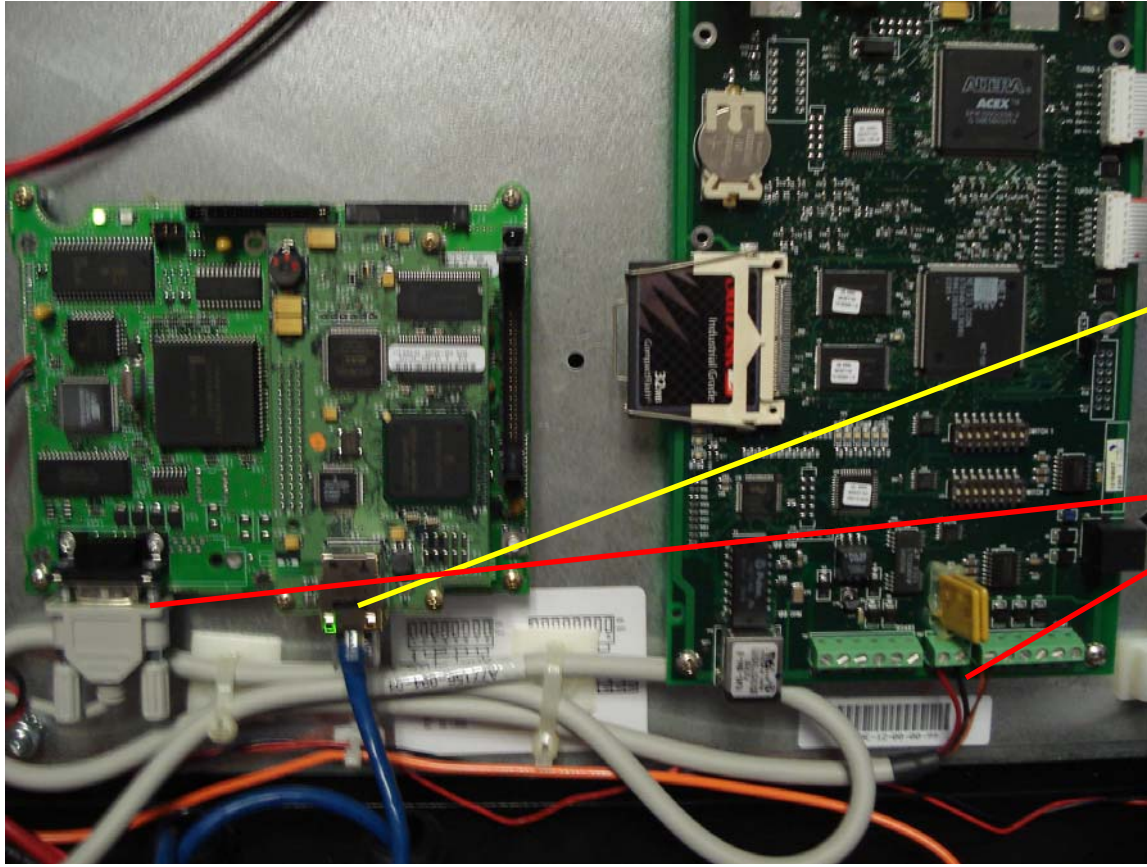
The add-on instruction file is compatible with:
RSLogix5000 V16 or later

NOTE: These instructions are for InView displays communicating over Ethernet/IP only. See 2706-UM017C-EN-P for information on configuring other networks. An additional communication module is required for Ethernet/IP.

2706-P22R
2706-P42
2706-P43
2706-P44
2706-P72C
2706-P74C
2706-P92C
2706-P94C

Overview Section

Below is a photo showing connections for a 2706-PENETK to a 2706-P92C InView message display.



Ethernet
network
connection

Serial connection
to the InView.

Note: the serial
cable is provided
with the kit.

Figure 1. 2706-PENETK connections.

This AOI creates the entire InView string that downloads and triggers a message for display. The message is also now stored in the InView for future use. This AOI allows the user to create his own messages in the ladder logic rather than using InView Messaging Software. The user has the ability to change message attributes such as text color, character font, text position, etc. However, the user does not have the ability to insert variables into the message – use InView Messaging Software to create messages containing variables or other objects such as date & time. More detail is provided later in this document. A sample ladder logic file is included with this AOI zip package.

General Setup

The following instructions outline the steps, in order, that are necessary to successfully download & trigger messages on an InView message display.

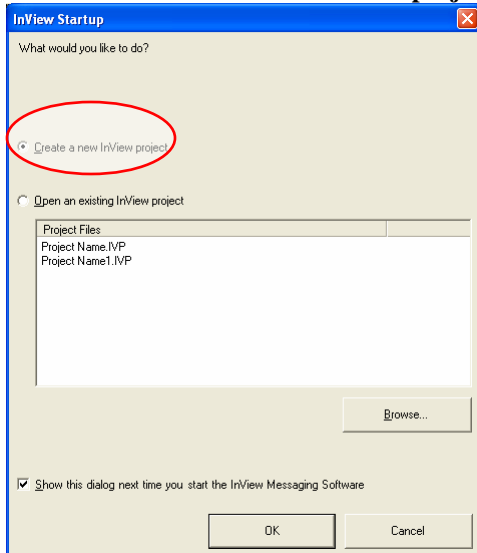
Step One – Configure the InView Communication Module

See the InView Communication Module user manual, 2706-UM017C-EN-P, for more information and instruction on how to setup the other protocols. Once the InView Messaging Software is launched, there will be a step by step process that will guide you through the project, display, and message file creation process.

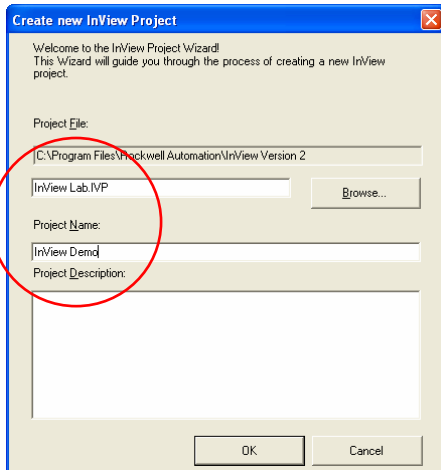
****NOTE** any selections or edits are automatically updated, there is no separate save feature.**

Go to **Start>Programs>Rockwell Automation>InView Software>InView Messaging Software** to start the InView Messaging Software. Once the InView Messaging Software has launched, you will be asked to either create a new project or open an existing one. We will create a new project.

1. Select the **Create a new InView project** radial button and click **OK**.



2. Enter a name for the **Project File** and for the **Project Name**. Click **OK**.



3. Select the display you are using from the **Display type** list. Enter a name for the display in the **Display name** field. Leave “1” as the number of displays required. Click **Next**.

Add Display - Identification - Step 1 of 3

Display name:
P22R

Display type:
2706-P22R

Number required:
1

Description:

Display Specification
Type: 2706-P22R
Dimensions: {Width=120, Height=7}
Colors: Red
Fonts: 5 High, 7 High, 7 Fancy

Cancel << Back Next >> Finish

Note: Description Field is used for more details regarding your display application such as; customer name, factory location or specifics of the display's use in your factory.

Next you will configure the type of communications between the display and the InView Messaging Software.

4. Select **Industrial Network Comms** and click the **Configure Communications** button under **Industrial Network Communications**.

Edit Display

Identification Communications Message File

Serial address: 1 Heartbeat: Disabled

Download Protocol:
☐ Serial ☐ Ethernet TCP/IP ☒ Industrial Network Comms

TCP/IP settings
Address: 192.168.1.100
Advanced... Configure Communications...

Serial port settings
COM port: COM1 Baud rate: 9600
Parity: None Data bits: 8
Stop bits: 1

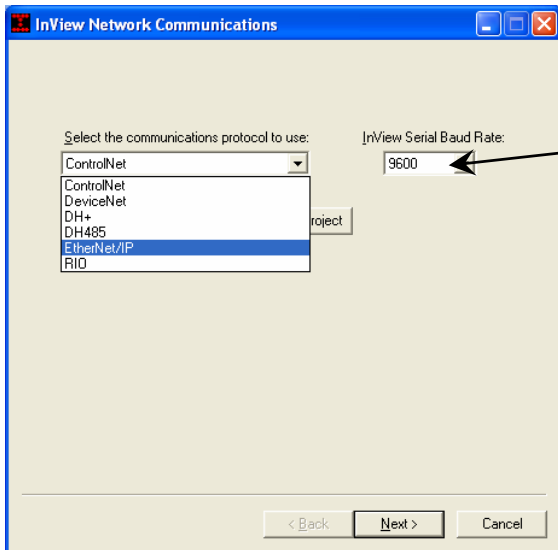
Industrial Network Communications
Protocol: None
Advanced... Configure Communications...

OK Cancel

Note: This section is used to select the type of communications the InView software on your PC will use to communicate to the InView

Note: These fields are used to configure communication on your InView display or communication module for use during runtime.

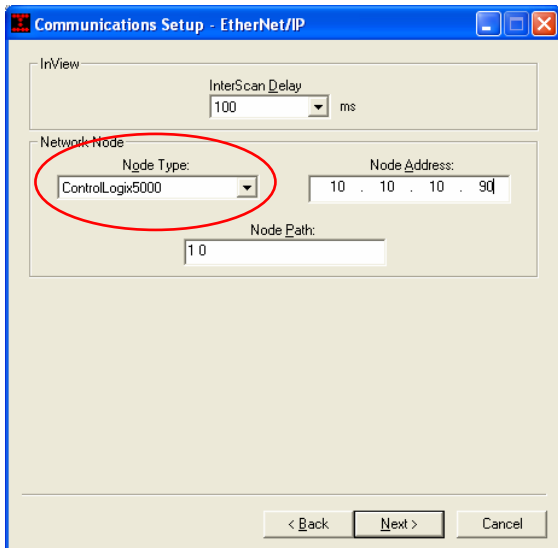
5. Select **EtherNet/IP** for the communications protocol and then click **Next**.



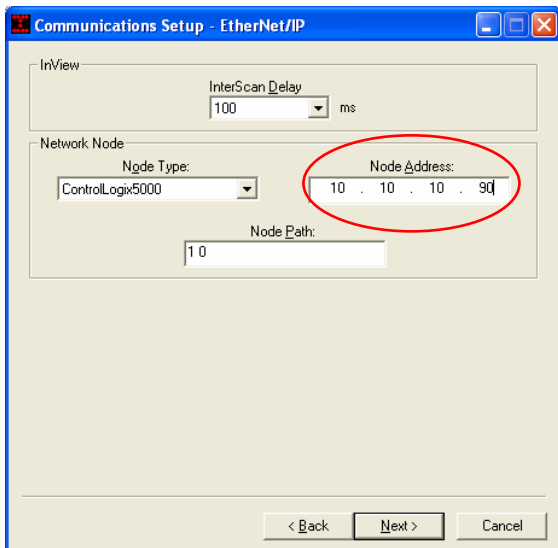
Note: **InView Serial Baud Rate** is the baud rate between the industrial communication module and your InView display. This should be set to 9600.

Now we will select the controller we are going to communicate with and its communications path.

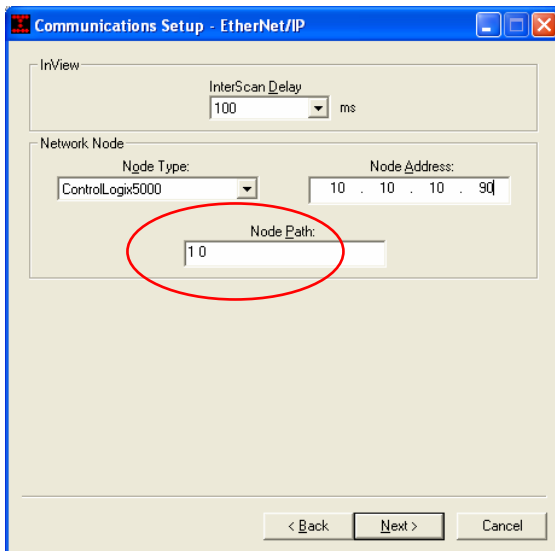
6. Select **ControlLogix5000** for the **Node Type**.



7. Enter the IP address of the Ethernet module in the ControlLogix chassis for the **Node Address**.



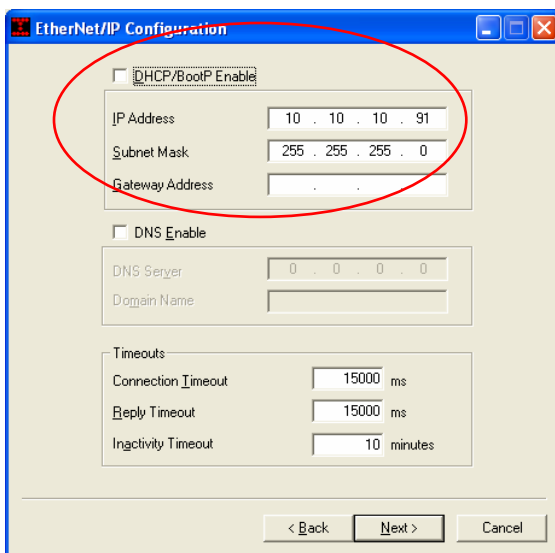
8. Enter the backplane address and the node address of the controller that will be communicating to the InView. Typically this is 'I' space '0' for the **Node Path**. Click **Next**.



The screenshot shows the 'Communications Setup - EtherNet/IP' window. It has a blue title bar and standard Windows window controls. The main area is divided into sections. The 'InView' section has an 'InterScan Delay' dropdown set to '100' ms. The 'Network Node' section contains a 'Node Type' dropdown set to 'ControlLogix5000', a 'Node Address' field with '10 . 10 . 10 . 90', and a 'Node Path' field circled in red with the value '1 0'. At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

This step will set a static Ethernet configuration for the Ethernet IP communication Module.

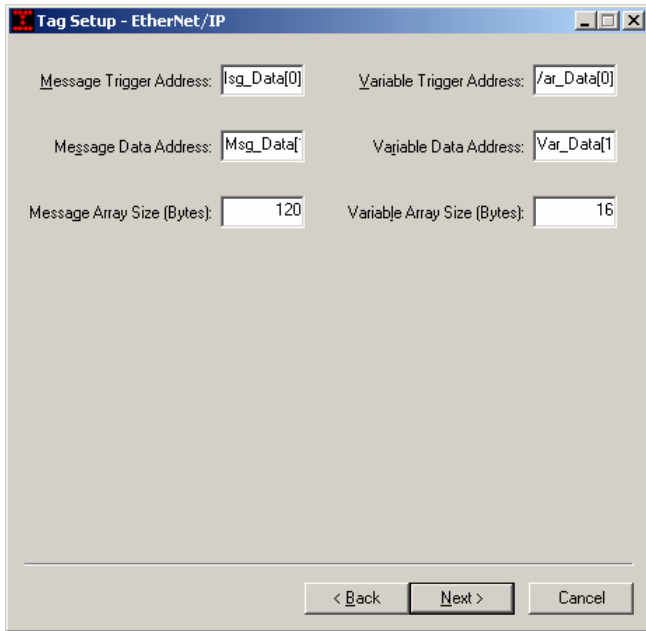
9. Uncheck **DHCP/BootP Enable** and enter the IP address you would like to assign to the communication module. Enter '255.255.255.0' for the **Subnet Mask**. Leave the **Gateway Address** blank and click **Next**.



The screenshot shows the 'EtherNet/IP Configuration' window. It has a blue title bar and standard Windows window controls. The 'DHCP/BootP Enable' checkbox is circled in red and is unchecked. Below it, the 'IP Address' field contains '10 . 10 . 10 . 91' and the 'Subnet Mask' field contains '255 . 255 . 255 . 0'. The 'Gateway Address' field is empty. Below these are 'DNS Enable' (unchecked), 'DNS Server' (0 . 0 . 0 . 0), and 'Domain Name' (empty). At the bottom are '< Back', 'Next >', and 'Cancel' buttons.

The following step specifies the tags within the controller that will contain the data and trigger values. Enter both the Message & Variable information.

10. Enter '**Msg_Data[0]**' for the **Message Trigger Address** and '**Msg_Data[1]**' for the **Message Data Address**. Enter '**Var_Data[0]**' for the **Variable Trigger Address** and '**Var_Data[1]**' for the **Variable Data Address**. Enter **120** for the message array size and **16** for the variable array size. Click **Next**.



The 'Tag Setup - EtherNet/IP' dialog box contains the following fields and values:

Field	Value
Message Trigger Address:	Msg_Data[0]
Variable Trigger Address:	Var_Data[0]
Message Data Address:	Msg_Data[1]
Variable Data Address:	Var_Data[1]
Message Array Size (Bytes):	120
Variable Array Size (Bytes):	16

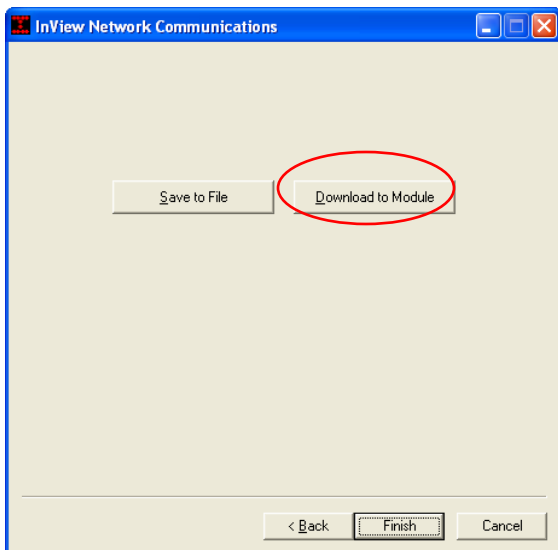
At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Note:

Trigger Address: this is the address that the InView communication module is monitoring to know when to output the data located at the Data Address.

Data Address: This is the address that contains the InView protocol for either triggering a message or updating a variable.

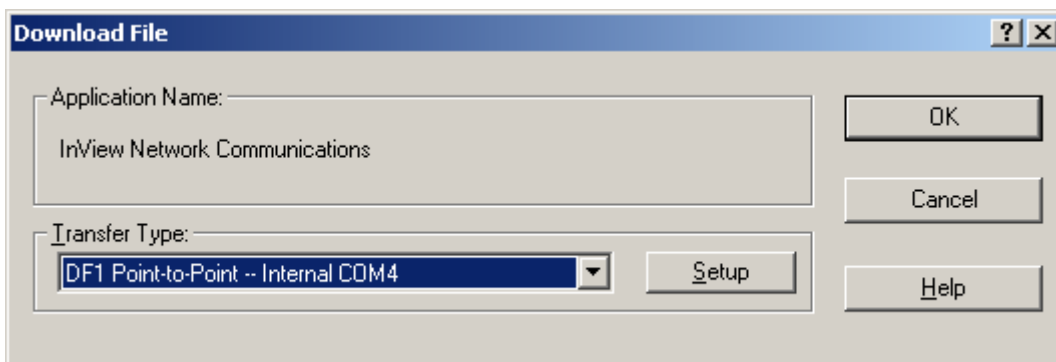
11. Click **Save to File** for future manipulation. Then click **Download to Module**.



The 'InView Network Communications' dialog box shows two buttons: 'Save to File' and 'Download to Module'. The 'Download to Module' button is circled in red. At the bottom, there are three buttons: '< Back', 'Finish', and 'Cancel'.

Note: Download of communication configuration for the first time is required to be performed serially.

12. Select DF1 Point-to-Point for the initial configuration download. Subsequent downloads can be done using RSLink and the configured protocol.

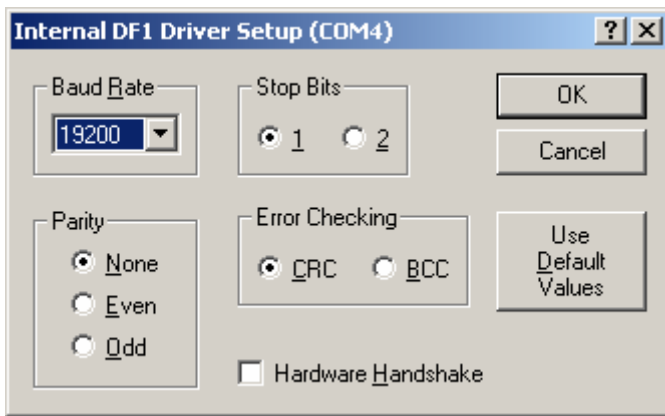


The 'Download File' dialog box contains the following fields and values:

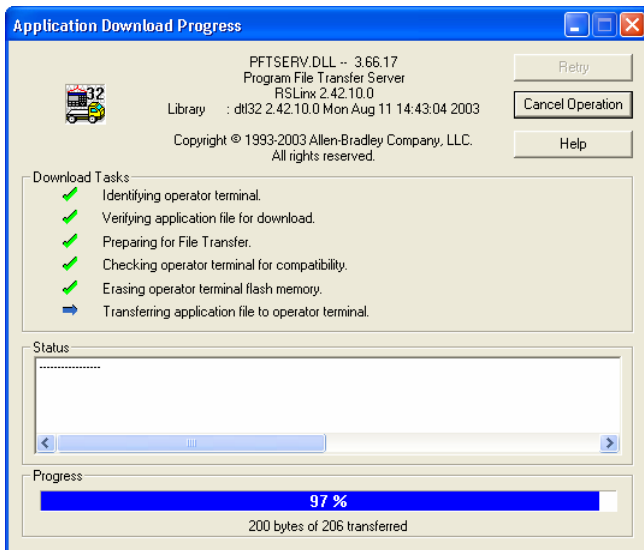
Field	Value
Application Name:	InView Network Communications
Transfer Type:	DF1 Point-to-Point -- Internal COM4

At the bottom right, there are four buttons: 'OK', 'Cancel', 'Setup', and 'Help'.

13. Click **Setup** and select the following settings.



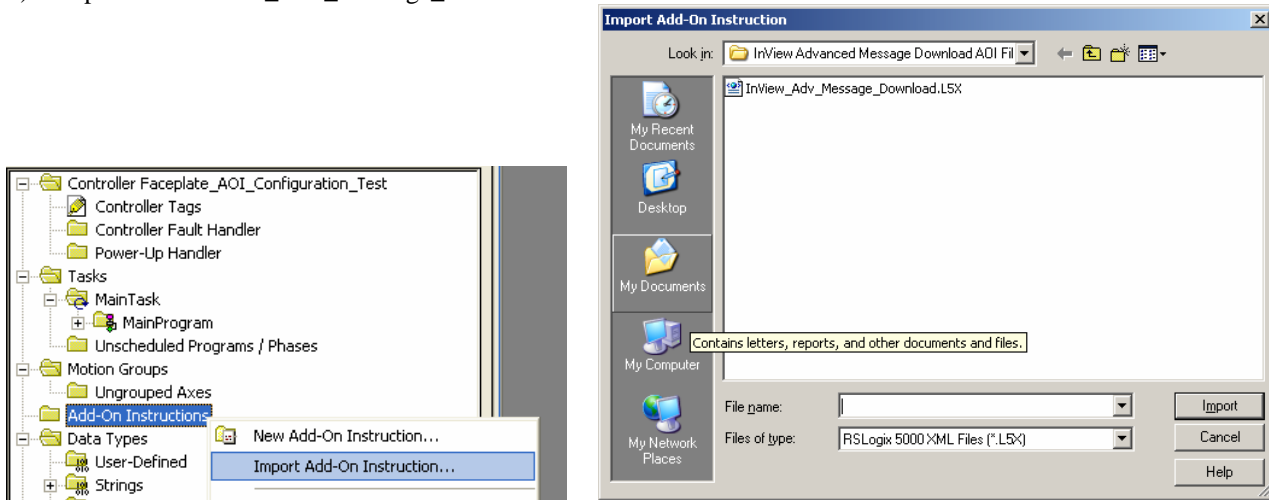
14. Click **OK** twice and the download utility will launch. Once the download is complete, the transfer utility will close.



15. Click **Finish** and then click **Next**.

Step Two – Logix Configuration

- 1) Copy “InView Adv Message Download AOI Files” folder and contents onto your development P.C..
- 2) Open the existing ladder logic file with RSLogix5000 v16 or newer.
- 3) Import the “InView_Adv_Message_Download” add-on instruction.



- 4) Create Controller tags and assign the corresponding data types for the AOI tags shown below. The controller tags you create will be used to pass the data to the AOI. See the AOI Sample Code section for an example.

****Note**** Out_message is a SINT of size 125 (this allows for a message size of 82 bytes or characters & the message attributes). The controller tag name you create for this AOI tag must be the same name as the Message Data Address name that was assigned in Step 10 on page 7.

Name	Usage	Data Type	Style	Description
EnableIn	Input	BOOL	Decimal	Enable Input - System Defined Parameter
EnableOut	Output	BOOL	Decimal	Enable Output - System Defined Parameter
Inp_Char_Width	Input	DINT	Decimal	Character width/height - standard, wide, dble wide, & double high
Inp_Color	Input	DINT	Decimal	Character color - red, green, & yellow
Inp_Display_Address	InOut	STRING		specific display address: 1 -254. A value of 0 is a broadcast.
Inp_Flash	Input	DINT	Decimal	determines whether to flash the character/text or not
Inp_Font	Input	DINT	Decimal	Character font - 5, 7, 10, 16, &24/32
Inp_Justification	Input	DINT	Decimal	Text justification - left or center
Inp_Message	InOut	STRING		message text
Inp_Mode	Input	DINT	Decimal	Mode of the message - rotate left & hold
Inp_Number	InOut	STRING		Number of the message for storage purposes
Inp_Position	Input	DINT	Decimal	Text position on the display - middle, top, bottom, fill
Inp_Priority	Input	DINT	Decimal	Message priority - this is used when using a message queue - L...
Inp_Speed	Input	DINT	Decimal	Pause rate between messages when using a message queue - ...
Message_string	Local	STRING[74]		
Out_message	InOut	SINT[125]	Decimal	Contains the complete InView protocol string that is sent to the...

AOI Sample Code

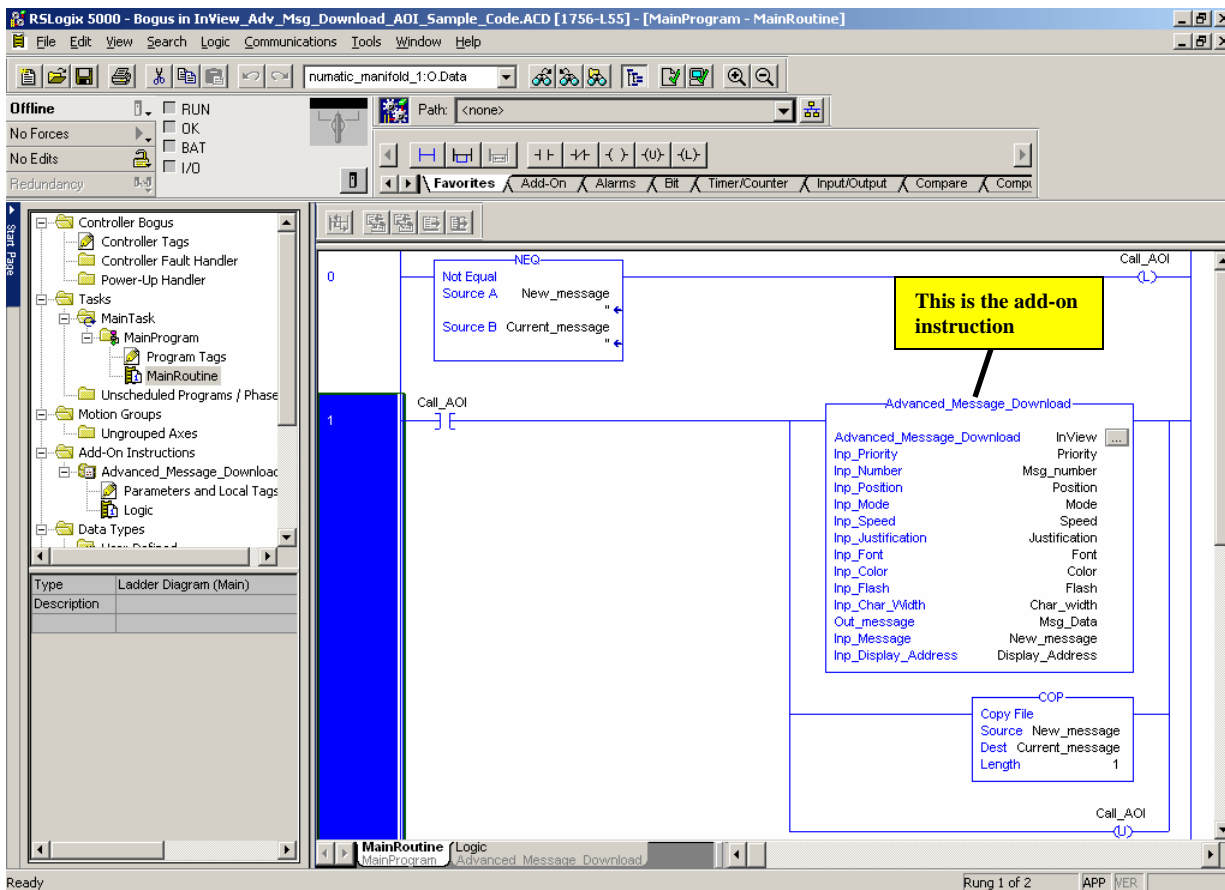
Below is a screen shot of a sample ladder program that is included with the InView Advanced Message Download AOI files. The AOI will execute each time New_message receives new text to display. As an example, to download & trigger a message and store it as message number 5 on an InView with a serial address of 20, the main ladder would manipulate the following tags:

New_message = This is the message to display
Display_address = 14 (hex value for decimal 20)
Priority = 2 (highest priority message)
Msg_number = 005 (requires three places)

The rest of the attributes can remain at 0. For test purposes, one can just manually enter these values directly into the appropriate controller tags.

The AOI will write the InView string to Msg_Data[1] and then change the state of Msg_Data[0]. This will cause the string to be sent out of the serial port of the InView communication module. See Step One in this document for information regarding configuring the InView communication module.

See the following pages for more info regarding the AOI inputs.



These are the controller tags that are used by the sample code.

The screenshot shows the RSLogix 5000 software interface. The title bar indicates the project is 'Bogus in InView_Adv_Msg_Download_AOI_Sample_Code.ACD [1756-L55]* - [Controller Tags - Bogus(controller)]'. The main window displays the 'Controller Tags' for the 'Bogus' controller. The left pane shows a project tree with folders like 'Controller Bogus', 'Tasks', 'Motion Groups', and 'Data Types'. The right pane shows a table of controller tags.

Name	Alias For	Base Tag	Data Type	Style	Description
Call_AOI			BOOL	Decimal	
Char_width			DINT	Decimal	
Color			DINT	Decimal	
Current_message			STRING		
Display_Address			STRING		
Flash			DINT	Decimal	
Font			DINT	Decimal	
InView			InView_Adv_Msg...		
Justification			DINT	Decimal	
Mode			DINT	Decimal	
Msg_Data			SINT[125]	Decimal	
Msg_number			STRING		
New_message			STRING		
Position			DINT	Decimal	
Priority			DINT	Decimal	
Speed			DINT	Decimal	
Var_Data			SINT[20]	Decimal	

The following is a list of the AOI inputs and a range of values for each input.

1. **Display_Address** – hex value of display address from 1 to 254 (FE). Use 00 for a display address of 255, which signifies a message broadcast. Two decimal places are required – display address of 1 would be 01.
2. **Priority** – decimal value of message priority, 0, 1, or 2
 - a. Low = 0
 - b. Medium = 1
 - c. High = 2
3. **Msg_number** – hex value of the desired message number for storage & future reuse. The values range from 1 to 4000 (FA0) based on the partition size of the InView. The background message is 4095, or hex value of FFF. In order to be able to store 4000 messages, the InView partition would be 50 – message size of 50 characters or bytes. A partition size of 100 would result in only 2000 messages being able to be stored. If the messages are intended to be stored in the controller, a message number of 1 can be used for all messages to display.

The message number must consist of three places; therefore, if using message number 1, enter it as 001.

4. **Position** – position on the InView where the message is to appear. The decimal values range from 0 to 3.
 - a. Middle = 0
 - b. Top = 1
 - c. Bottom = 2
 - d. Fill = 3
5. **Mode** – determines whether the message rotates or not. The decimal values are either 0 or 1.
 - a. Rotate left = 0
 - b. Hold = 1
6. **Speed** – determines how long a message will be displayed if using the message queue function. A message queue can hold up to 64 messages. The decimal values range from 0 to 5.
 - a. No hold = 0
 - b. 1 second = 1
 - c. 2 seconds = 2
 - d. 3 seconds = 3
 - e. 4 seconds = 4
 - f. 5 seconds = 5
7. **Justification** – determines whether the message is centered or left justified. The decimal values are either 0 or 1.
 - a. Left = 0
 - b. Center = 1
8. **Font** – determines the character font. The decimal values range from 0 to 7.
 - a. 5 high standard = 0
 - b. 7 high standard = 1
 - c. 7 high fancy = 2
 - d. 10 high standard = 3
 - e. 16 high fancy = 4
 - f. 16 high standard = 5
 - g. 24/32 fancy = 6
 - h. 24/32 high = 7
9. **Color** – determines the character color. The decimal value ranges from 0 to 2.
 - a. Red = 0
 - b. Green = 1
 - c. Yellow = 2
10. **Char_width** – determines the character width & height. The decimal values range from 0 to 3.
 - a. Standard = 0
 - b. Wide = 1
 - c. Double wide = 2
 - d. Double high = 3
11. **Flash** – determines whether the text flashes or not. The decimal values are either 0 or 1.
 - a. Flash off = 0
 - b. Flash on = 1
12. **New_message** – this contains the text to display on the InView. If using a Sint of 150 (this is what is used in the sample code), the message can be as large as 116 characters. This also means that the InView would need to be set for a partition of 200 characters, which is the default.