Avid®
iNEWS® ControlAir™
Chyron CG Device Manager Guide
1.6.0

This Device Manager Guide is intended to advise you of certain technical requirements and considerations that will affect your use of the Chyron character generator device manager (Chyron DM) with the Avid iNEWS ControlAir System.

This guide covers the following general areas:

Installation: the hardware and software needed to control a Chyron character generator device from the ControlAir System.

Configuration: the configuration options needed to control how the Chyron CG device manager and a character generator behave, including specific instructions for setting up and controlling each of the character generators in the Chyron line that support the Chyron Intelligent Interface System.

Operation: notes on using the Chyron CG device manager in a news production environment.

Table of Contents

Installation

The Chyron CG Device Manager (Chyron DM) is included on the ControlAir Installation CD along with the other device managers distributed by Avid Technology. For detailed information about the installing this or other Avid device managers, refer to Chapter 3 of the *iNEWS ControlAir Installation and Operations Manual*. The CD also contains sample DMP files for the various CG types that this DM can control. These should be installed as well as the Chyron DM. Selecting the appropriate sample DMP file can provide guidance in setting the proper options for any given site configuration.

Hardware

The optimum configuration is for the Chyron DM to run on the same computer as the ControlAir Server program. It can also run on a separate computer if necessary. In that case, hardware requirements are identical to those used for the ControlAir Server. For detailed information about the hardware requirements for a ControlAir Server, refer to Chapter 2 of the *iNEWS ControlAir Installation and Operations Manual*.

The Chyron DM is designed to control any of the line of Character Generators from Chyron Corporation which offer remote computer control through Chyron's Intelligent Interface software. The list includes the dual channel iNFiNiT! and MAX>!, the single-channel MAXINE!, and the PC-based, dual-channel Duet. For any of these interfaces, the Chyron DM will be connected to the CG through a single serial connection, which can be configured as RS-232 or RS-422, depending on site requirements. While the DM uses the Machine ID to identify the target CG on any Chyron network, for performance reasons it is strongly recommended that the DM is connected directly to the CG that it is controlling.

Cabling

The most common installations of Chyron DM use an RS-232 connection. However, if the distance between the ControlAir computer and the CG is too great for RS-232, an RS-422 connection or RS-422 converters are an option.

RS-232

All Chyron CGs use only three lines for an RS-232 connection: transmitting on pin 3, receiving on pin 2, and grounded on pin 5. The Chyron ignores the hardware handshaking lines. However, depending on the hardware and settings, it may be necessary to jumper the hardware handshake lines on the ControlAir Server side of the connection. Assuming standard PC COM ports, the suggested pinouts for an RS-232 connection are:

ControlAir DB-9			**Chyron CG DB-9**	
Receive	Pin 2	-----	Pin 3	Transmit
Transmit	Pin 3	-----	Pin 2	Receive
Ground	Pin 5	-----	Pin 5	Ground
RTS/CTS	Pins 7 --- 8			
DCD/DTR/DSR	Pins 1--- 4 --- 6			

ControlAir DB-25			**Chyron CG DB-9**	
Transmit	Pin 2	-----	Pin 2	Receive
Receive	Pin 3	-----	Pin 3	Transmit
Ground	Pin 7	-----	Pin 5	Ground
RTS/CTS	Pins 4 --- 5			
DCD/DTR/DSR	Pins 8 --- 20 --- 6			

RS-422

If the distance between the ControlAir computer and the CG is too great for RS-232, an RS-422 connection or RS-422 converters are an option. Members of the iNFiNiT! Family, i.e. iNFiNiT!, MAX!>, and MAXINE!, are delivered configured for RS-232, but can be converted to RS-422 operation through internal jumper settings.   The procedure is different for each model. See the *Intelligent Interface Option Handbook* for the appropriate conversion procedure and pinouts for the specific model.

Avid Technology can supply RS-422 serial port expansion boards. See the accompanying documentation for the appropriate cable pinouts.

Note: Some sites have used RS-422 to RS-232 converters for long cable runs without converting the Chyron to RS-422 operation. Some of these converters draw line power from the hardware handshaking lines on the RS-232 side of the connection. Although the Chyron does not use these lines, it may still supply enough voltage over them to power the converter.

Software

The Chyron DM uses the basic Intelligent Interface command set and is compatible with Revision A, dated October, 1996, of that protocol. Any members of the iNFiNiT! Family, i.e. iNFiNiT!, MAX!>, or MAXINE!, installed or upgraded since then should operate without problems.
Note that the Intelligent Interface package is a separate option and must have been purchased and installed for the Chyron DM to control the CG. The Machine ID must be set from the Setup Menu by pressing the Setup key while in the main Loader menu. For detailed instructions, see Section 3 of the *Chyron iNFiNiT! Family Operator's Manual*.

For the Duet, however, Release 3.1 or higher of Lyric software is required for control by the Chyron DM. Release 4.2 or higher of Lyric software is required to properly use the `EnableDoubleByte` feature of the Chyron DM. Release 5.2 or higher of Lyric software is required to properly use the `SendUnicodeCommands` feature introduced in this release of the Chyron DM. The Intelligent Interface option is included in Lyric; select Config->Intelligent Interface on the Lyric tool bar to enable the correct serial port, to set the Machine ID, and to enable Unicode I/O if available. Duet does not support all Intelligent Interface features. See the Chyron Lyric documentation for up-to-date information about which features are available.

For all Chyron CGs, the Machine ID must match the value set in the Chyron DM configuration (DMP) file. See the MachineID option on page 6 for more information.

Upgrading From Earlier Versions of the Chyron DM

This document describes version 1.6.0.27 of the Chyron DM for the Avid ControlAir system. Some enhancements and/or changes have been made in this release that may require configuration changes at sites upgrading from earlier versions of the Chyron DM. The new features described below apply to upgrades from either release 1.0.5 or release 1.1.0. For versions earlier than 1.0.5, refer to the release 1.0.5 or 1.1.0 Chyron Device Manager Guide for additional changes or added features.

Features in Release 1.6.0

ControlAir 1.6.0 stores all text internally in the Windows Unicode format (UTF16-LE). ControlAir 1.6.0 also accepts text input as either ASCII or UTF16-LE encoded Unicode text. Beginning with release 2.5, the iNEWS newsroom computer system stores and sends text in Unicode format.

The Intelligent Interface protocol for the Chyron iNFiNiT! Family of character generators is a 7-bit ASCII interface. It does, however, provide a method for encoding non-ASCII text for Tab Message fields using Multi-byte encoding and this release of the Chyron DM supports that feature. All other data is restricted to the ASCII character set.

The Lyric software interface for the Chyron Duet Family of character generators uses an extended subset of the Intelligent Interface. Beginning with Lyric Release 5.2, the Lyric Intelligent Interface allows the sending and receiving of all Intelligent Interface commands as UTF16 Unicode. Release 1.6.0.27 of the Chyron DM supports Unicode commands for the Duet Family.

Changes in the DMP file

Two new options were added to the [Configuration] section to enable encoding CG text as Multi-byte characters. The EnableDoubleByte option controls this feature. When enabled, the CodePage option sets the encoding method.

A new option, SendUnicodeCommands, was added to the [Communications] section. This option causes all Intelligent Interface traffic to be sent and received as UTF16 data. This option is only supported for CGType DUET or OTHER.

Configuration

The following sections detail configuration issues that are specific to the Chyron DM. For additional information about configuring ControlAir device managers, see Chapter 5 of the *iNEWS ControlAir Installation and Operations Manual*.

Configuration (DMP) File

Most of the device manager configuration information is defined in a file called a Device Manager Profile (DMP) file, which has a .dmp file extension. The various configuration options within DMP files are divided into sections. Each section starts with its name enclosed in square brackets, such as [Configuration]. The options within a section are defined as *Keyword=Value,* where *Value* may be a number, a word or group of words, or a Boolean value—either TRUE (YES) or FALSE (NO). Section names and, with the exception of those in the [Mapping] section, keywords are case-insensitive.

Caution: All ControlAir DMs use the same functions to read the DMP file. These functions utilize the same Windows system functions used to read INI files. The Windows functions will not correctly locate keywords if the DMP file is saved in either "Unicode big endian" or "UTF-8" encoding. All DMP files should be saved using either "ANSI" or "Unicode" encoding.

The following sections describe the options available in a Chyron DM DMP file. Two sections contain required settings:

> [Configuration]
>
> [Communications]

The other optional sections include:

> [Channels]
>
> [WSStatusStrings]
>
> [Dictionary]
>
> [Mapping]
>
> [Effects]
>
> [Commands]

[Configuration]

There are three required configuration settings that must be included in the [Configuration] section. They are the name of the ControlAir Server machine, the device name that identifies this instance of the Chyron DM and the type of CG that will be controlled.

SvrHostName=*computer-name-or-alias*
The SvrHostName option specifies the name of the ControlAir Server. This is the name used by the Chyron DM to connect to the ControlAir Server program. The name can be any alias by which the server computer is known, the simplest being "localhost" if the DM runs on the same computer as the ControlAir Server program.

DeviceName=*device-name*
The DeviceName option specifies the device name. This must match the device name assigned to this device in the SYSTEM.MAP file on the iNEWS system.

CGType=**INFINIT** or **MAX** or **MAXINE** or **DUET** or **OTHER**
The CGType option specifies the type of CG being controlled. This setting is used to set appropriate default values for other configuration settings. Some of those default settings may be overridden by setting the option to something other than the default. In some cases, the option is meaningless for the specified CG type – for example, the Mix Preset for MAXINE! or Duet – and will be ignored. There are five available values:

> Types INFINIT and MAX default to 2 channels, 2 buffers, set Preview mode on and require a Mix Preset setting to initialize the channel and buffer settings. These are the appropriate settings for the dual-channel iNFiNiT! or MAX!>. To operate either as a single-channel machine, enter the appropriate type here and set the PreviewOn option to NO.

> Type MAXINE defaults to 1 channel, 1 buffer, sets Preview mode off and disables the Mix Preset and Disable Prompts Monitor settings. This is the appropriate setting for the MAXINE!, which is a single-channel CG.

> Type DUET defaults to 2 channels, 2 buffers, sets Preview mode on and disables the Mix Preset and Disable Prompts Monitor settings. Using this setting enables the SendUnicodeCommands option in the [Communications] section. To operate a Duet as a single-channel machine, set the type to DUET and set the PreviewOn option to NO.

> Type OTHER applies to any machine that does not belong to the Chyron iNFiNiT!, MAX!>, MAXINE! or Duet families of character generators. Using this setting enables the SendUnicodeCommands option in the [Communications] section with some non-standard character translation not used by the Duet. This type disables the Mix Preset and Disable Prompts Monitor settings, but all other options can be configured. It defaults to 2 channels, 2 buffers and sets Preview mode on.

There are several optional configuration settings that may be included in the [Configuration] section. If these options are not included, the Chyron DM will use the default setting for the option.

MachineID=*number*
The MachineID option specifies the Chyron machine ID. This setting identifies the CG that will respond to Intelligent Interface control and must match the machine ID set on the Chyron itself. The default value is zero (0).

PreviewOn=**YES** or **NO**
The PreviewOn option specifies the Preview mode. Preview mode is available on any dual-channel CG. It is not available on the single-channel MAXINE!. If Preview mode is enabled, supers are "cued" on the Preview channel and transferred to the Program channel when the PLAY key is pressed. If Preview mode is disabled, supers are "cued" in a non-displaying buffer and taken directly to the Program channel when the PLAY key is pressed. Any dual-channel CG can be used in single-channel mode by setting the PreviewOn option to NO. The default value is controlled by the CGType option.

NumberOfBuffers=*number*
The number of available non-displaying buffers can be specified by the **NumberOfBuffers** option. This can be any number between 1 and 3, depending on the hardware in use. The value specified here is used to validate effects. The default value is controlled by the CGType option.

MixPreset=*number*
The MixPreset option specifies the Mix Preset value. This setting identifies the pre-recorded Mix Preset recalled to initialize buffer and channel settings when a show is reserved in Preview mode. The CGType and PreviewOn options control whether or not this option is used. The default value is zero (0).

ExtendCharSet=**YES** or **NO**
Because many of the Chyron keyboard values have meaning when embedded in the text of supers, the Chyron DM normally limits the text in fields to 7-bit characters by stripping the high-bit from any 8-bit values. There are two ways to allow 8-bit characters into field text. The first is to use Character Mapping (described in the [Mapping] section on page 10) because the mapped strings are set un-stripped. The second is to enable 8-bit field text using the ExtendCharSet option. If this option is set to YES, all field text is sent un-stripped. The default value is NO.

EnableDoubleByte=**YES** or **NO**
The Intelligent Interface allows non-ASCII characters to be included in field text by sending them as Multi-byte characters enclosed within special marking characters. Set this option to YES to have the Chyron DM convert non-ASCII characters to their Multi-byte equivalent values and enclose them with the proper special characters. The Multi-byte character set to be used is defined by the CodePage option. The default value is NO.

CodePage=*Windows-code-page-number*
If the EnableDoubleByte option is set to YES, set the Windows code page to use when converting from Unicode to Multi-byte characters with the CodePage option. The code page selected here should match the Multi-byte character set used by the Chyron CG. This option is ignored if the EnableDoubleByte option is set to NO. If the EnableDoubleByte option is set to YES and this option is not used, the current Windows code page will be used for the conversion.

FrameRate=**NTSC** or **PAL**
The Chyron DM calculates the duration of READ effects using the number of frames per second specified by the FrameRate option. If this option is set to PAL, it uses 25 frames per second, if NTSC, it uses 30. The default value is NTSC.

DisablePromptsMonitor=**YES** or **NO**
Reserving a show and setting up some effects requires the Chyron DM to step through some menu options on the non-PC-based CGs. Displaying these menus on the Chyron can be time consuming. Display of those menus can be turned off by setting the DisablePromptsMonitor option to YES. the The CGType option controls whether or not the DisablePromptsMonitor option is used—which is effective for INFINIT and MAX CG types only. The default value is NO.

ShowTimeStamps=**YES** or **NO**
The diagnostic window displays error, warning and diagnostic messages according to the level set in the "Logs" menu. By default, a time stamp and diagnostic level indicator precede these messages. To remove the time stamp and diagnostic level, set the ShowTimeStamps option to NO. This option has no effect on disk log files, which always include time stamps and the diagnostic level indicator.

LogToFile=**YES** or **NO**
The error, warning and diagnostic messages displayed in the diagnostic window may also be saved to a disk file. To save these messages to a file named "**Chyron DMLog**_index_**.txt**", set the LogToFile option to YES. The default value is NO.

LogFileDirectory=***directory-path***
If the diagnostic logs are to be saved to disk, set the location of those logs using the
LogFileDirectory option. The directory path for log files can be a full path name or a path relative to
the current directory. Relative paths can include the ".\" or "..\" (or "..\..\", etc.) syntax to indicate the
current or parent directories. The system ignores this option if the LogToFile option is set to NO. The
default directory path is the current directory.

MaxLogFiles=***number-of-files***
If the diagnostic logs are to be saved to disk, the Chyron DM appends a number to the file name. That
number starts at zero and is incremented each time the DM is started or whenever the current file
reaches 10,000 lines of text. To set the limit at which the Chyron DM will start reusing these numbers, set
the MaxLogFiles option. This option is ignored if the LogToFile option is set to NO. The default value
is 10.

[Communications]

The serial line parameters must be set in the [Communications] section. Other, optional
communications settings can be configured in this section. If the optional settings are not set here, the
Chyron DM will use the default values shown.

Serial1=***serial-line-parameters***
The Serial1 setting specifies the parameters for the serial connection to the CG. These settings contain 5
colon-separated fields: *com-device-name, baud-rate, #-data-bits, parity* and *#-stop-bits.*

> The *com-device-name* field is the name of the computer port that will be used, for example
> COM1 or COM5.

> The *baud-rate* field is the baud rate for the computer port that will be used. Available settings
> range from 300 to 256000, but the most commonly used are 4800, 9600, 19200 or 38400. The
> default for all Chyrons is 9600.

> The *#-data-bits* field is the number of data bits per byte transmitted. Available settings are **7**
> or **8**. The default for all Chyrons is 8.

> The *parity* field is the parity setting for the data bytes transmitted. Available settings are **'n'** for
> no parity, **'e'** for even parity and **'o'** for odd parity. The default for all Chyrons is no parity (n).

> The *#-stop-bits* field is the number of stop bits per byte transmitted. Available settings are **1,
> 1.5** or **2**. The default for all Chyrons is 1.

HandShaking=**SOFTWARE** or **DTRONLY** or **RTSONLY** or **HARDWARE** or **NONE**
The HandShaking option specifies hardware/software handshaking on the serial line. This setting
determines whether or not hardware or software handshaking is used to control the data flow over the
serial line. There are five available values:

> Setting this option to SOFTWARE enables XON/XOFF flow control and disables all hardware
> handshaking. Chyron CGs use XON/XOFF flow control when their input buffers reach the high or
> low-water marks. Those buffers are large and flow control is generally only seen when sending
> large blocks of text, as with Crawl effects. This is the default setting.

> Setting this option to DTRONLY, RTSONLY or HARDWARE enables DTR/DSR flow control,
> RTS/CTS flow control or both, respectively. These settings are not appropriate for the iNFiNiT!,
> MAX!> and MAXINE! series, which do not enable the hardware handshake lines on their serial
> ports. These settings may be appropriate for the Duet or other PC-based CGs.

Setting this option to NONE disables XON/XOFF flow control and all forms of hardware handshaking.

RetryCount=**number**
The number of times any command is resent if no response is received can be changed by setting the RetryCount option. Normally, if no response is received within the normal timeout period, the Chyron DM will retry sending that command two more times before declaring a communication failure and taking the device off-line. The number of retries can be increased or decreased with this setting. The valid range for RetryCount values is zero to 10 retries. The default value is 2.

TimeoutNormal=**number**
The length of time the Chyron DM will wait for a response to the commands it sends can be changed using the TimeoutNormal option. Normally, the DM will wait two seconds for a reply to most of the Intelligent Interface commands it sends to the CG. In special cases, other, longer timeouts are applied. The normal timeout can be increased or decreased with this setting. The valid range for TimeoutNormal values is 1 to 30 seconds. The default value is 2.

TimeoutDirectoryChange=**number**
The length of time the Chyron DM will allow for a response when initializing a reserved show can be changed using the TimeoutDirectoryChange option. Normally, the DM will wait 5 seconds for a reply when setting the show directory on the CG. If the directory structure is large or complex, this action may take longer to complete. The directory change timeout can be increased or decreased with this setting. The valid range for TimeoutDirectoryChange values is 1 to 30 seconds. The default value is 5.

PollingInterval=**number**
When the serial connection to the CG is lost, the Chyron DM will attempt to reconnect at a regular interval. That interval can be changed using the PollingInterval option. The default value is 10 seconds.

PollingCommand=**string**
When the serial connection to the CG is lost, the Chyron DM will attempt to reconnect at a regular interval. To query the CG, the DM sends an unused Chyron keyboard value, which should have no affect upon the normal operation of the CG. In the unlikely event that the default polling command does cause problems for any reason, its value can be changed using the PollingCommand option. Any valid Chyron keyboard value or combination of keys may be substituted. The default is the unused Chyron key with the decimal value 244.

SendUnicodeCommands=**YES** or **NO**
The original Intelligent Interface is a 7-bit ASCII protocol. The field text for supers can be either 8-bit characters or Multi-byte values enclosed within special marking characters. However, some PC-based characters generators support an extension to the Intelligent Interface where all data is sent and received in Unicode format. If this option is set to YES, the Chyron DM will attempt to send and receive all messages as UTF16-LE encoded Unicode text. This option cannot be set if the CGType is not set to DUET or OTHER. This option cannot be set if the EnableDoubleByte option is also set. The default value is NO.

[Channels]

Chan**index** =**channel-description-string**
The names of the Chyron channels displayed on the ControlAir Workstation can be set in this section. This is done by assigning the name of the A channel to **Chan1** and the name of the B channel to **Chan2**. The default values are "A" for Chan1 and "B" for Chan2.

[WSStatusStrings]

Any or all of the event status strings displayed on the ControlAir Workstation can be changed in this section. For any status not entered in this section, the default value will be displayed on the ControlAir

Workstation. This feature is provided to enable a site to customize the ControlAir Workstation display. The new status text should be short enough to fit into the Status field on the ControlAir Workstation. Changing the text of a status string does not change the meaning of the status.

The format for changing event status string text is:

*Event-Status=***status-description-string**

where *Event-Status* is one of the ControlAir status tokens defined below and **status-description-string** is any text string. The statuses used by the Chyron DM and their default values are:

> The **EVENT_UNKNOWN** status is the initial state of every event. It indicates that the super has not yet been processed by the Chyron DM. The super cannot be cued or played in this state. The default value is "Unknown".
>
> The **EVENT_UNAVAILABLE** status indicates that the Chyron DM failed to build or process the super. The super cannot be cued or played in this state. The default value is "Unavailable".
>
> The **EVENT_AVAILABLE** status indicates that the super has been successfully built or processed by the Chyron DM. The super is ready to be cued or played. The default value is "" (an empty string).
>
> The **EVENT_PENDINGCUE** status indicates that the Chyron DM is in the process of cueing the event. The default value is "?Cued?".
>
> The **EVENT_CUED** status indicates that the Chyron DM has successfully cued the super and it is ready for immediate play. The default value is ""Cued".
>
> The **EVENT_PENDINGPLAY** status indicates that the Chyron DM is in the process of taking the super to air. This status is set by the ControlAir Workstation when the operator presses the PLAY key. If an event remains in this state for more than a fraction of a second, it indicates that the Chyron DM was unable to air the super. The default value is ""?Play?".
>
> The **EVENT_PLAYING** status indicates that the Chyron DM has successfully taken the super to the air channel. The default value is ""Play".

[Dictionary]

The message strings sent to the ControlAir Workstation or iNEWS Workstation by the Chyron DM can be changed in this section. For any message not entered in this section, the default value will be used. This feature is provided to enable a site to translate or otherwise clarify the meaning of error, warning or informational messages for the ControlAir Workstation operator. It should be noted that changing the text of a message string does not change the meaning of the message. There are three levels of severity for these messages: Error, Warning and Info. Unless indicated otherwise, the messages below are Error level messages.

For more information about how Error and Warning messages are used and what corrective actions can be taken, see the "Error Handling" section on page 28.

The format for changing dictionary entries is:

Dictionary-Keyword=**error-warning-message-string**

where ***Dictionary-Keyword*** is one of the keywords defined below and ***error-warning-message-string*** is any string of text. The error message keywords used by the Chyron DM and their default values are:

The **Aborted** error message indicates that the Chyron DM has encountered a very serious internal error and cannot continue. The DM has exited and must be restarted. The default value is "Aborted ".

The **AttemptReconnect** message indicates that someone has clicked on the "Reset" button in the Chyron DM window. This is an Info level message. The default value is "Attempting reconnect".

The **BuildFailed** message indicates that the Chyron DM was unable to build the identified super because of some error in the event information. Another message will have preceded this one explaining the cause of this failure. This is a Warning level message. The default value is "Cannot build super".

The **ChyronErrorReturn** error message indicates that the CG has responded to a request from the Chyron DM with an Intelligent Interface numeric error code. The default value is "Chyron error return".

The **CueFailed** error message indicates that the Chyron DM was unable to cue the identified super because of some error in the event information. Another message will be combined with this one explaining the cause of this failure. The default value is "Cannot cue".

The **InvalidSpeed** error message indicates that the Chyron DM was unable to cue the identified super because of an invalid Roll or Crawl speed. This message will be combined with the CueFailed message. The default value is "Invalid speed value".

The **LoadComplete** message indicates that the Chyron DM has completed the download of a show by building or processing all the supers in the playlist. This is an Info level message. The default value is "Download Complete".

The **LostConnection** error message indicates that the Chyron DM has lost the serial connection to the Chyron. This condition is reached when no response is received from the CG after resending a command for the specified number of retries. The default value is "Lost connection to the CG".

The **ReconnectComplete** message indicates that someone has clicked on the "Reset" button in the Chyron DM window and the DM has successfully established a serial connection with the CG. This is an Info level message. The default value is "Reconnect complete".

The **ReconnectFailed** message indicates that someone has clicked on the "Reset" button in the Chyron DM window but the DM could not established a serial connection with the CG. This is an Info level message. The default value is "Error Reconnecting".

The **RegainedConnection** message indicates that the Chyron DM has restored serial communications with the Chyron. The serial connection had been lost because the CG was not responding to DM commands. The default value is "Regained connection to the CG".

The **Stopped** message indicates that someone has closed the Chyron DM window. The DM has exited and must be restarted. This is a Warning level message. The default value is "Stopped".

The **TextTooLong** error message indicates that character mapping has expanded the length of the CG text to beyond the limits set by the Chyron DM. The iNEWS Server limits CG text to 2000 characters and the Chyron DM will support 4000 characters of translated text. In most cases, only Crawl text will ever approach those limits. If Crawl text does exceed the 4000 character limit, the super will fail to cue. The default value is "Translated text too long".

The **UnknownEffect** error message indicates that the identified super references an undefined effect and could not be properly processed. This message may precede the BuildFailed message or be combined with the `CueFailed` message. This is a Warning level message. The default value is "Unknown effect".

The **UnknownReturn** error message indicates that the CG has responded to a request from the Chyron DM in a way not defined by the Intelligent Interface protocol. The default value is "Unknown Chyron return".

[Mapping]

The Chyron DM provides a means to map characters in the CG text to other characters or groups of characters. This is may be desirable or necessary for several reasons. The characters in the Windows Codepage used by iNEWS probably do not map directly to the character set used by the CG. Some eight-bit characters correspond to control keys on the Chyron keyboard; including them in text could have very undesirable effects. Conversely, it may be desirable to map characters to some of those Chyron keyboard values, such as the Color keys, which can be embedded in field text.

The format for character mapping is:

*character-to-map=***mapped-to-string**

where *character-to-map* is any single character and *mapped-to-string* is any string of characters.

Special characters outside the ASCII range can be represented by their decimal value enclosed within angle brackets, '<' and '>'. This notation can be used for any character on either side of the assignment operator, '='. Note that the '=', '<', '>' and some other characters must be represented by their decimal values to avoid confusing the DM. The decimal values for '=', '<' and '>' are <61>, <60> and <62> respectively.

Examples:
; The example below maps the '~' character to the Chyron "Red" key, decimal value 168.
; There result would be that any text that follows a '~' in a tab field will change color to red.
~=<168>

; The example below maps # to the ALT + 3 character, which is '£' in some fonts.
#=<207><51>

; Note that the '=' and some other characters must be treated specially
; on the left-hand-side of the '='.
<61>=" is equal to "

Warning: While the Chyron DM will allow any characters in the *mapped-to-string,* the CG may not handle some characters gracefully. For instance, in the example above, the combination of the ALT and 3 keys on the Chyron keyboard sends a keycode equal to decimal 8. That value, however, is not handled gracefully through the Intelligent Interface. Some experimentation and caution are needed when determining the correct mapping sequences.

[Effects]

Read Effects

The Chyron DM performs special handling of certain Chyron Read effects as outlined in this section. Those effects include: Wipe, Push, Hide, Reveal, Dissolve and Cut.

Read effects are supported by the Chyron iNFiNiT!, MAX!> or MAXINE!, but not Duet. Read effects must be entered in the [Effects] section of the Chyron DM DMP file. The format for a Read effect entry is:

effect-name=**READ:***buffer-id***:***effect-string*

where

> *buffer-id* is the Read effects command ID, which identifies the buffer and thus the corresponding channel where the effect will execute. This field may have two types of entry. If the *buffer-id* value is the string "$BID", the Chyron DM will set the buffer value based on the current on-air buffer. If the *buffer-id* value is a number, that value will be used. Valid *buffer-id* numeric values are **0** for buffer 1, **1** for buffer 2, or **2** for buffer 3 (iNFiNiT! only). In Preview mode, the **$BID** variable should be used to prevent effects from being cued in the wrong buffer or played to the wrong channel.

> *effect-string* contains several of the parameters for a Read effect command as defined in the Chyron Intelligent Interface. These parameters will be included in the Read effect setup without change. Note the use of the backslash, '\', character to separate fields and that two backslashes are needed to terminate the string. The format for the *effect-string* is:

mode*type**speed**ease**rev*[*rowd*[*rowd*]]\\\\

where

> *mode* is a single letter identifying the type of effect: **C** = Cut, **D** = Dissolve, **H** = Hide, **P** = Push, **R** = Reveal, **W** = Wipe.

> *type* is a single letter identifying the transition pattern: **A** = Horizontal Slide/Wipe, **B** = Vertical Slide/Wipe, **C** = Horizontal Split Wipe, **D** = Vertical Split Wipe, **E** = Box Wipe, **F** = Row Slide/Wipe, **G** = Scanline Wipe (1/4 screen at a time), **H** = Row-by-Row Scanline Wipe, **I** = Screen Scanline Wipe, **J** = Pixel Wipe. Transitions C, D and E apply to Wipes only. While this field does not affect Dissolve, it still requires a value between A and J.

> *speed* is the effect duration in frames. The valid range is 1 to 300 frames. (1 second = 60 NTSC frames or 50 PAL frames.)

> *ease* is the Ease control (accelerate/decelerate to/from speed) setting: **0** = No Ease, **1** = Ease In, **2** = Ease Out, **3** = Ease In and Out.

> *rev* is the Reverse Direction setting: **0** = Off, **1** = On.

> *rowd* is the optional Row direction setting for Transition Patterns F, G or H. If not specified, row direction for these Transition Patterns will be determined by the Chyron default values. A direction can be entered for each of a maximum of 24 rows, numbered 0 – 23. The available directions are: **0** = Up, **1** = Down, **2** = Left, **3** = Right, **4** = Static.

Examples:
```
; 6 second box Wipe – from screen center outwards
wipe=read:$BID:W\E\180\0\0\\
```

```
; 3 second row Push - holds rows 0-5 static and pushes row 6 up and row 7 down
vpush67=read:$BID:P\F\90\0\0\4\4\4\4\4\4\0\1\\

; 3 second row Push - holds rows 0-2 and 4-7 static and pushes row 3 to the
right
hpush3=read:$BID:P\F\90\0\0\4\4\4\3\4\4\4\\

; 2 second Hide from the right
hide=read:$BID:H\A\60\0\1\\

; 2 second Reveal from the top down
reveal=read:$BID:R\B\60\0\0\\

; 3 second Dissolve
dissolve=read:$BID:D\A\90\0\0\\
```

These examples are offered only as illustrations of how to fill in the parameters to the `<effect string>` field. Each site should define effects that fit its particular styles.

Roll Effects

Because of restrictions in the Chyron Intelligent Interface, the Chyron DM must treat Roll effects differently from Read effects. The limitations imposed on Roll effects are described in detail in the Special Operational Considerations below.

Roll effects are supported by the Chyron iNFiNiT!, MAX!> or MAXINE!, but not Duet. Roll effects must be entered in the `[Effects]` section of the Chyron DM DMP file. The format for a roll effect entry is:

effect-name=**ROLL:***Speed*10***:***page-count***:***auto-cue*

where

> *Speed*10* is the roll speed value in tenths of a unit. For values of 10 to 90, the unit is the Speed number to be entered into the roll control buffer. For values above 90, the number represents a Time value in tenths of seconds. For example, 50 will be set to Speed 5.0 and 205 will be set to Time 20.5 seconds. Timed rolls must run as Special Rolls, which require two buffers to execute. Refer to the Chyron Operation Manual for detailed information regarding Special Rolls.

> *Warning*: Values below 10 will result in the Roll effect failing to execute.

> *page-count* is number of pages to roll. If *page-count* is 1, only the current event will be rolled. If *page-count* is greater than 1, the current event plus the next *page-count* -1 events in the same story will be rolled. See the *Warning* on page 15 regarding multi-page rolls and the ControlAir Workstation cursor.

> *auto-cue* has two values: **autocue** or **noautocue**. If the value is "autocue", this event will be auto-cued whenever the previous event is taken to air. If the value is "noautocue", the ControlAir Workstation operator must manually cue the event. If this field is blank or some other value, it will default to "autocue". Because playlist updates are suspended while a Roll effect is in the cued or playing state, it may be desirable to set this option to "noautocue".

Examples*:*
```
; Roll a single page with a total duration of 12 seconds; operator must
manually cue Roll
roll=roll:120:1:noautocue

; Roll three pages at Speed 5.0; event will be automatically cued
```

```
roll3=roll:50:3:autocue

; Roll two pages at Speed 5.0; event will be automatically cued
roll2=roll:50:2:autocue
```

Warning: All roll effects are "noautostop" effects. The Chyron DM device manager cannot detect when the effect has completed and, therefore, cannot autocue the next event. The ControlAir Workstation operator must manually cue the next super after the roll stops.

Warning: Multi-page roll effects do not advance the ControlAir Workstation cursor past the last page of the roll. The Chyron DM will set the status of all pages in the roll to the correct CUED or PLAY status as appropriate.   This will provide a visual indication of which events are included in the roll effect. However, the ControlAir Workstation operator must move the cursor to the correct position and manually cue the next super after the roll stops.

Crawl Effects

Because of restrictions in the Chyron Intelligent Interface, the Chyron DM must treat Crawl effects differently from Read effects. The limitations imposed on Crawl effects are described in detail in the Special Operational Considerations below.

Crawl effects are supported by the Chyron iNFiNiT!, MAX!> or MAXINE!, but not Duet. Crawl effects must be entered in the `[Effects]` section of the Chyron DM DMP file. The format for a roll effect entry is:

effect-name=**CRAWL:***Font-#:Color-#:Speed*10:position:auto-erase:auto-cue*

where

> *Font-#* is the number of the Font key on the Chyron keyboard for desired font

> *Color-#* is the name of the Color key on the Chyron keyboard for desired font color. (Magenta is spelled Mgnta on the Chyron keyboard.)

> *Speed*10* is the crawl speed value in tenths of a unit. For values of 90 or less, the unit is the Speed number to be entered into the crawl control buffer. For example, 50 will be set to Speed 5.0.

> ***Warning***: values below 10 or above 90 are meaningless for crawls and will result in the Crawl effect failing to execute.

> *position* is the position on the screen where the Crawl will take place. If the value entered is less than 20, it is interpreted as the row where roll will execute. Note that the top row is 0 and that the font size controls the row size. Other text on the screen may also affect where the crawl executes. If the value is 20 or above, it is interpreted as the number of pixels by which the top row will be shifted down. Note that any text in that row or the rows below it will also be shifted down.

> *auto-erase* has two values: **autoerase** or **noautoerase**. If the value is "autoerase" the air channel will be cleared when the crawl is cued. If the value is "noautoerase ", the air channel will be left unchanged and this message will crawl over whatever image is on the air channel. Note that setting auto-erase disables auto-cue. If this field is blank or some other value, it will default to "noautoerase".

> *auto-cue* has two values: **autocue** or **noautocue**. If the value is "autocue", this event will be auto-cued whenever the previous event is taken to air. If the value is "noautocue", the ControlAir Workstation operator must manually cue the event. If this field is blank or some other value, it will

default to "autocue". However, if the value of the *auto-erase* field is "autoerase", the *auto-cue* value will be set to "noautocue" regardless of the setting here. Because playlist updates are suspended while a Crawl effect is in the cued or playing state, it may be desirable to set this option to "noautocue".

Warning: All Crawl effects are "noautostop" effects. The Chyron DM cannot detect when the effect has completed and, therefore, cannot autocue the next event. The ControlAir Workstation operator must manually cue the next super after the crawl stops.

Warning: Once the ControlAir Workstation operator presses the PLAY key, the Crawl cannot be aborted from the ControlAir Workstation keyboard*.* The effect will stop on its own when all the text has "crawled" across the screen. The only way to abort a Crawl effect before it completes is by pressing the ESC key on the Chyron keyboard. (The ControlAir Workstation operator can un-cue a Crawl event with the STOP key. And the STOP key can also be used once the Crawl effect has finished to auto-cue the next event.)

Warning: Several factors determine the placement of text upon the screen during a Crawl effect. Text crawls across the screen at the current Chyron cursor position. The Chyron DM attempts to position that cursor based on the `position` option. There are two methods for calculating the screen position. If the number is less than 20, the Chyron DM treats the value as a line number. It positions the cursor by first setting the specified font and then sending a Home key followed by *position* Return keys. The height of the selected font determines the height of and, therefore, the number of lines needed to place the cursor in the desired position. However, the height of existing text on the on-air screen may also affect the placement of the cursor. If the value of the `position` option is 20 or greater, the Chyron DM first sends a Home key and then sends a Super-Shift Row Down key using the number of pixels specified. Any text on the screen will be shifted down as well. Note that positioning the cursor off the screen will result in the Crawl effect failing to execute. It is the user's responsibility to ensure that text is correctly placed under all conditions in which this effect may be used. This is especially true when the `auto-erase` option is not used.

Examples:
The example below sets the `auto-erase` option to ensure that text crawls across an otherwise blank screen. The crawl speed is set to 6.0. White text, in font #1, will crawl across the bottom of the screen. Because the `auto-erase` option is set, this event will not be auto-cued. Note also that when the *auto-erase* option is set, the cursor position can be set more precisely by specifying a pixel position. Refer to the *Warning* above regarding text placement on the on-air screen.

```
ecrawl=crawl:1:white:60:350:autoerase:noautocue
```

The next example differs in three respects. White text, in font #1, will crawl over the text and images currently on the on-air screen. The crawl position will be at row 6, which is presumably near the bottom of the screen, depending on the height of the selected font. The crawl speed is set to 4.0. This event will be automatically cued when the previous event is aired. Refer to the *Warning* on page 10 regarding text placement on the on-air screen.

```
crawl=crawl:1:white:40:6:noautoerase:autocue
```

Command Effects

The Chyron DM provides a feature that allows for user-defined effects. These effects are called command effects and come in two parts. An effect of type Command is created in the `[Effects]` section of the Chyron DM DMP file. This effect references an entry in the `[Commands]` section which contains the actual command sequences used.

Command effects are supported by all Chyron CGs: iNFiNiT!, MAX!>, MAXINE! and Duet. The format for a Command effect entry is:

effect-name=**COMMANDS:***cmd-ID***:***trigger-#***:***duration***:***auto-cue***:***auto-stop*

where

> *cmd-ID* is the name of the command string macro in the `[Commands]` section. If this field is left blank, the *effect-name* is used.

> *trigger-#* is the number of play triggers needed. If this field is left blank, the trigger count is set to 1.

> *duration* is the duration in seconds of the effect or animation. The value in this field determines how long the Chyron DM will wait for a response to the PLAY sequence of commands. If this field is left blank, the duration is set to 0.

> *auto-cue* has two values: **autocue** or **noautocue**. If the value is "autocue", this event will be auto-cued whenever the previous event is taken to air. If the value is "noautocue", the ControlAir Workstation operator must manually cue the event. If this field is blank or some other value, it will default to "autocue".

> *auto-stop* has two values: **autostop** or **noautostop**. If the value is "autostop", the next event will be auto-cued when this effect completes. If the value is "noautostop", the ControlAir Workstation operator must manually cue the next event when this effect completes. If this field is blank or some other value, it will default to "autostop".

Examples:
```
; This is an example of a 2 trigger effect.
; Refer to "yesorno" on page 19 in the [Commands] section examples.
aboutface=commands:yesorno:2:4:noautocue:autostop

; A static crawl using a pre-recorded crawl control buffer and pre-recorded
text.
; Refer to "scrawl"  on page 19 in the [Commands] section examples below.
; As with all crawls, this effect must be no auto-stop.
scrawl=commands::1:60:autocue:noautostop

; A static roll using a pre-recorded roll control buffer and pre-recorded
pages.
; Refer to "sroll" on page 19 in the Commands Section examples.
; As with all rolls, this effect must be no auto-stop;
; it is "noautocue" effect because the cue sequence clears the screen.
sroll=commands::1:60:noautocue:noautostop
```

[Commands]

This section contains the command sequences needed to execute the command effects defined in the `[Effects]` section of the DMP file. This user-defined command sequence can contain any legal Chyron Intelligent Interface commands. The user is responsible for the accuracy of the commands and the results of their use.

A command sequence is divided into three separate parts: a CUE sequence, a PLAY sequence and a STOP sequence. Each part may comprise several separate commands, or be blank. Each sequence will be sent to the CG at the appropriate time, depending in part, on the `effects` option settings. The CUE sequence will sent when the event should be cued, which is controlled by an auto-cue option for the effect. The PLAY sequence is sent in response to the ControlAir Workstation operator pressing the PLAY key. The STOP sequence is controlled by an `auto-stop` option for the effect. It will be sent in response to the STOP key, the CUE of another event or, if auto-stop is enabled, when the DM detects that the last

command in the PLAY sequence has completed. In the Intelligent Interface, only 'V' commands signal the completion of an action.

Variables are provided to allow the substitution of some values that may change from message to message, most notably the message and template addresses and current buffer identifiers. These variables are defined below. They are case-sensitive and must be entered exactly as shown.

The format for a command sequence entry is:

```
command-name=cue-command-set:play-command-set:stop-command-set
cue-command-set=command-set
play-command-set=command-set
stop-command-set=command-set
command-set=any-legal-II-command[,command-set] | empty-command-set
```

where

>   *cue-command-set* is the sequence of Intelligent Interface commands that should be sent when this event is cued. If this sequence will alter the air channel or change the current, known state of the CG, the auto-cue option for this effect should be turned off to prevent any interference with the preceding event.

>   *play-command-set* is the sequence of Intelligent Interface commands that need to be sent when this event is taken to air. It is sent only when the ControlAir Workstation PLAY key is pressed. In all cases, the *cue-command-set* will be sent to the CG before these commands. If the trigger count specified in the effect definition is larger than the number of Play commands provided, the last command will be repeated with each subsequent press of the PLAY key.

>   *stop-command-set* is the sequence of Intelligent Interface commands that need to be sent when this effect is complete. If the cue sequence altered the status of the CG, by changing the currently active effects buffer with a Change or Xfer key, for instance, this sequence should return the machine to its previous state. Failing to do so could adversely affect the Chyron DM's ability to control playback correctly. If this sequence will alter the air channel or change the current, known state of the CG, the auto-stop option for this effect should be turned off to prevent the premature canceling of this event.

>   *command-set* is any sequence of legal Intelligent Interface commands. Individual commands are separated by a comma.   Certain command fields can contain special identifiers, which the Chyron DM will replace with the proper values. The DM also calculates and appends the appropriate checksum to each command string. Each command will be sent separately, in the order listed. A command set may also be empty.

These optional variables can be substituted for data fields in a command string. The variable names are case-sensitive and must be spelled exactly as shown:

>   **$MID** is the Machine ID, used to identify the Chyron to which commands are directed. Its value is set from MachineID in the [Configuration] section.

>   **$TADD** is the Tab Message address in an ASCII format suitable for V commands.
>   **#TADD** is the Tab Message address as a Chyron keypad code suitable for Y commands.

>   **$PADD** is the Message address in an ASCII format suitable for V commands.
>   **#PADD** is the Message address as a Chyron keypad code suitable for Y commands.

>   **$BUF** is the current on-air buffer number. Use this variable for fields where the buffer numbers start at 1, i.e. 1 = buffer 1, 2 = buffer 2, 3 = buffer 3.

$BID is the current on-air buffer ID. Use this variable for fields where the buffer identifiers start at 0, i.e. 0 = buffer 1, 1 = buffer 2, 2 = buffer 3.

[PAUSE] marks the position of a new play trigger, for example, a pause point in a CG animation. When the first PLAY key is pressed, all the comma-separated command stings preceding the PAUSE marker will be sent. With the next PLAY, all the all the comma-separated command stings following the PAUSE marker, up to the next PAUSE or the end of the command sequence, will be sent. As many PAUSE markers as needed may be included in the play command sequence. If the trigger count specified in the effect definition is larger than the number of Play commands provided, the last command will be repeated with each subsequent press of the PLAY key.

Examples:
```
; This is the command sequence for the "aboutface" example on page 17 in
Command Effects section.
; It is a nonsense example of how a two-trigger effect might use the [PAUSE]
marker

yesorno=y\$MID\<205>\\:v\$MID\5\13\1\1\$TADD\1\No! never!\\
       [PAUSE]v\$MID\5\13\1\1\$TADD\1\Well....   Maybe.\\:

; This is the command sequence for the "scrawl" example on page 17 in the
Command Effects section.
; This static crawl is designed for Preview/Progam mode, the cue sequence
changes the
; active buffer and the stop sequence changes it back.  The message address
contains the
; address of the pre-recorded crawl control buffer.

scrawl=v\$MID\05\6\1\$BUF\\,y\$MID\<247><202>#PADD<248><216>\\:
       y\$MID\ \\:y\$MID\<254><247>\\

; This is the command sequence for the "sroll" example on page 17 in the
Command Effects section.
; This static roll is designed for a single-channel mode.  Because the screen
is cleared, this
; cannot be an auto-cue event.  The message address contains the address of
the pre-recorded
; roll control buffer.

sroll=y\$MID\<205><202>#PADD<248><217>\\:y\$MID\ \\:y\$MID\<254>\\
```

Note: These command sequences should be entered on the same line. The line breaks here are for readability.

The iNEWS Map File

This section lists the SYSTEM.MAP story fields that are required for the Chyron DM. For detailed information about defining ControlAir devices in the SYSTEM.MAP story, refer to "Configuring Monitor Servers" in Chapter 4 of the *iNEWS ControlAir Installation and Operations Manual*.

The format of the SYSTEM.MAP story for ControlAir devices changed with the release of iNEWS version 2.5. The Map Story fields that are required for the Chyron DM are the same as earlier releases, but are entered slightly differently. The new format allows for a separate drive and directory entry for template files, but the Intelligent Interface does not support separate directories for Tab Messages. Refer to the examples below for details.

The Device Type field must be **CG**. The Device Name must be the same as that assigned to the Chyron DM in the DMP file.

Enter the drive and directory where new supers are to be built in the positions shown. Directory names on the iNFiNiT!, MAX!> and MAXINE! are case-sensitive. Also, a copy of any Tab Message files used for this rundown must also be recorded in the specified Message directory. For iNEWS 2.5 or later, enter a dash (-) as a placeholder for the template drive and directory field.

Note: Beginning with iNEWS 2.5, much of the information entered in the SYSTEM.MAP *story may contain non-ASCII characters. However, the drive and directory names must still contain only ASCII characters as the Chyron line of character generators will only accept ASCII values through the Intelligent Interface.*

The address range should be unique for each rundown downloaded to the same drive and directory combination. The monitor assigns addresses to CG events and while it re-uses addresses whenever possible it also attempts to keep messages within a story at contiguous addresses. Adding events to a story may cause all events in that story to be re-assigned; therefore, Avid recommend the address range be greater than the maximum number of expected events to allow for updating.

Example (iNEWS 2.0 or earlier):

;Device	Device		Update	CAWS		Playlist		Comment
;Type	Name		Flag	Form		Group		
cg	max1@CASvr	-		CA-CAWS		C**:**MAX**:** 5000 7999 ; Chyron MAX!>

Example (iNEWS 2.5 or later):

:Server	Server	Backup	CAWS		Comment
;Type	Name	Name	Form		
casvr	CASvr	-	CA-CAWS		; Server defined separately, its device list follows

;Device	Device	Device	Message	Template	Start	Last	Comment
;Type	Name	Alias	Drive/Directory	Drive/Directory	Address	Address	
cg	max1	-	C**:**MAX	-	5000	7999	; Chyron MAX!>

The iNEWS Resource Files

Styles

Chyron styles must be defined in the iNEWS SYSTEM.RESOURCE story. Entries for CG styles contain 5 fields: *device-name*, *style-name*, *template-address*, *effect-name*, and *number-of-text-fields*. Comments may be entered, as well, when preceded by the comment delimiter, which is ';' by default. These fields must be in the required order and, if not used, should contain a dash, '-', as a place holder. The meanings of the fields are:

Note: Beginning with iNEWS 2.5, the device-name, style-name, and effect-name fields may contain non-ASCII characters. The template-address field must still contain only ASCII digits as the Chyron line of character generators will only accept numeric values for Data File or Tab File fields through the Intelligent Interface. (This restriction does not apply for Crawl Effects, where the template-address field is unused except as a comment.)

> *device-name* is the name assigned to identify a specific character generator. It must match a device name defined in the SYSTEM.MAP story and the DMP file used for the Chyron DM. If more than one CG device is being used, separate entries for each style must be made for each separate device. iNEWS limits device names to 8 significant characters.

style-name is the name used to identify a style. It is matched to the style name entered with a production cue in a rundown story. iNEWS limits style names to 8 significant characters.

template-address is the address of the Chyron Tab Message used to format a super on the CG when there are one or more text fields. If no text fields are used, the address of a pre-recorded super will be entered here.

effect-name is the name assigned to identify a specific effect as defined in a DMP file for the Chyron DM. If there is not a matching entry in the DMP file, any super using this effect will fail to build. iNEWS limits effect names to 8 significant characters.

number-of-text-fields is the number of tab fields defined in the Chyron Tab Message at the location specified in the template-address field. If the number of text fields is set to 0 (zero) here, then the super at the location specified in the template-address field is assumed to be a pre-recorded super.

Examples:

;Dev	Style Alias	Template	Effect	# Lines	Comment
max1	world	2002	-	1	; World News Tonight - one line
max1	wworld	2002	wipe	1	; WNT – full-screen wipe
max1	onloc	2003	-	2	; On Location - two lines
max1	ronloc	2003	reveal	2	; OL – full-screen dissolve
max1	jdsport	5005	-	0	; Up next, Sports with John Doe

Effects

Effects can be applied to character generated graphics (also known as supers) in the rundown through the styles defined in the iNEWS SYSTEM.RESOURCE story. The fourth field in a style entry may contain the name assigned to identify a specific effect as defined in a DMP file for the Chyron DM. This section provides examples and some additional detail about how different types of effects may be used with the styles defined in the Resource Story.

Read Effects

Read effects can be applied to almost any super by simply specifying an effect for its style in the SYSTEM.RESOURCE story. Different effects may be used to create different styles using the same Chyron Tab Message.

Examples:

;Dev	Style Alias	Template	Effect	# Lines	Comment
max1	world	2002	-	1	; World News Tonight - one line
max1	wworld	2002	wipe	1	; WNT – full-screen wipe
max1	pworld	2002	hpush3	1	; WNT – push one line right
max1	dworld	2002	hide	1	; WNT – full-screen hide
max1	dworld	2002	dissolve	1	; WNT – full-screen dissolve
max1	onloc	2003	-	2	; On Location - two lines
max1	wonloc	2003	wipe	2	; OL – full-screen wipe
max1	ponloc	2003	vpush67	2	; OL - push lines apart vertically
max1	ronloc	2003	reveal	2	; OL – full-screen dissolve

The examples of Push Effects above are provided to illustrate the rowd parameter. They are customized for their respective Tab Message pages because they affect specific text rows. In the "World News Tonight" example, the single user text field is row 3 with static text and blank rows above and below it. In the "On Location" example, row 0 is static text, followed by 5 blank rows and user entered text on rows 6 and 7. To mix these effects with other Tab Messages could produce undesirable results.

In this example, these effects are designed for a second page of the same format:

* max1 world Financial Summit Upcoming

* max1 pworld Fifteen Countries Represented

Warning: The behavior of Read Effects is often altered by text or graphics already on the on-air screen. Care should be taken when using these effects to ensure that the transitions are compatible with the other styles that may be used or that the undesirable combinations are known and avoided.

Roll Effects

Single-page Rolls
Single-page Roll effects can be pre-recorded pages, like the "credits" example below. Or they can include user-entered text, like the "troll" example below.

Examples:

;Dev	Alias	Template	Effect	# Lines	Comment
max1	credits	2020	roll	0	; single page of pre-recorded credits
max1	troll	2010	roll	5	; roll one page with user-entered text

Multi-page Rolls
It is often necessary to combine more than one page of text and graphics into a Roll effect. Separately rolling each page is an unusable solution because of the delay in cueing the next page. Chyron provides for multi-page Roll effects and the Chyron DM supports them with some limitations on the format.

If all the pages in the Roll effect contain only pre-recorded text and graphics, the most efficient way to implement that effect is to build a pre-recorded Roll Control Buffer and use a Chyron DM Commands Effect to execute it. The details of how to do that are outlined in the discussion of Command Effects on page 16 in the `[Effects]` Section of the DMP file.

However, it may be necessary to include user-entered text on some pages of the Roll effect. For example, a "credits" roll might have sever entries that do not change from show to show, but may also list names and titles for "special assignment" staff or guest contributors.

Warning: The addresses assigned to the pages within the multi-page Roll block must be sequential. To accomplish that, each page of the roll must contain at least one user-entered field. However, if there is no need for user-entered text on any given page, that field can be left blank. The "credits1" and "credits2" examples below illustrate how a multi-page roll effects with a mixture of pages that include user-entered text and static-text pages may be implemented.

Examples:

;Dev	Alias	Template	Effect	# Lines	Comment
max1	troll2	2010	roll2	5	; roll two pages
max1	troll3	2010	roll3	5	; roll three pages
max1	croll	2010	roll	5	; continuation roll page
max1	credits1	2030	roll2	2	; first, page of multi-page credits
					; one position open for text entry:
					; name and title
max1	credits2	2031	roll	1	; pre-recorded page of multi-page
					; credits, leave text field blank

In the examples above, "troll2" and "troll3" represent the first page of user-entered text that will be followed by either one or two pages, respectively. The "croll" entry is added for clarity, indicating that this is a continuation page for a multi-page Roll effect. In fact, any single page with one or more text fields will work. To use the multi-page rolls, the correct number of roll pages should follow the first Roll entry in the

iNEWS story. The roll3 style will roll up to three pages from the same story. However, if there aren't enough production cues, the Chyron DM truncates the page count.

```
* max1 roll3 first page
of text…….
```

```
* max1 croll another page
of  text…..
```

```
* max1 croll the last page
of text…
```

The "credits1" style above is an example where a single line in the credits—one name and one title field—is left open for user-entered text. The continuation page, "credits2", contains the rest of the static information and does not need user entered text. The single field here will be blank-filled when no text is entered.

```
* max1 credits1 John Doe
On Special Assignment
```

```
* max1 credits2
```

Crawl Effects

The length of text that can be entered into a single field in an iNEWS production cue is currently restricted to 255 characters. To create longer crawls, the text can be broken up into several fields which will be concatenated together when effect is played. Each field of text will be separated by a single space. The two examples below refer to the two sample Crawl effects in the DMP examples.

Examples:

;Dev	Alias	Template	Effect	# Lines	Comment
max1	crawl	overlay	crawl	10	; crawl over current screen
max1	ecrawl	erase	ecrawl	10	; crawl over blank screen

Note: Crawls do not use a tab message file (template), so that space is used here as a comment. In iNEWS templates can be alphanumeric, unlike the message record address. The number of fields in a crawl doesn't matter, but each field is limited to about 250 characters, so put in enough fields for the user to enter all of the necessary text. A single space separates each field in a crawl.

Command Effects

These examples illustrate the style definitions for Command Effects examples in the DMP file. The Template addresses for the "sroll" and "scrawl" effects store the address of the pre-recorded Roll and Crawl Control buffers.

Examples:

;Dev	Alias	Template	Effect	# Lines	Comment
max1	sroll9	996	sroll	0	; roll control buffer command
max2	scrawl9	999	scrawl	0	; crawl control buffer command
duet	yesno	905	aboutface	1	; 2-trigger sample

Operation

Operational Requirements

For all members of the iNFiNiT! Family, i.e. iNFiNiT!, MAX!>, or MAXINE!, the CG must be put in proper state before the Chyron DM can control it effectively. Before any shows are downloaded to the ControlAir Server, enter the Message Compose program on the CG and load the necessary fonts. If the CG is to be used in Preview mode (refer to the `PreviewON` option on page 6 in the `[Configuration]` section), the appropriate Mix Preset values must also be recorded each time Message Compose is entered.

For the supers built by the Chyron DM, the correct fonts must be loaded to the Chyron Font Keys each time Message Compose is entered. There are several ways to load fonts, refer to Section 6 of the *Chyron iNFiNiT! Family Operator's Manual* for the most appropriate method.

If Preview mode is used (iNFiNiT! or MAX!> in dual-channel mode only), the Chyron's channels and buffers must start in a known state. The Chyron DM does this by recalling a pre-recorded Mix Preset whenever a show is reserved. Mix Presets are volatile and must be recorded each time the Message Compose program is entered.

To record the necessary Mix Preset:

1. Press the MIX key on the Chyron keyboard.
2. Set the channels to the following values:

    Channel A - 1 - 100%
    Channel B - No frame buffer selected
    Preview – 2

3. Save these settings to the value set for the `MixPreset` option in the DMP File (as described on page 7) by pressing CNTL S or selecting the Save Mix icon. A Save Mix window will appear.
4. To change the preset value in this window, press the CLR key and enter the correct value using the Address Keypad.
5. Press the ENTER key to close the Save Mix window.
6. Press the MIX key to exit the Mix Menu.

See Section 16 of the *Chyron iNFiNiT! Family Operator's Manual* for more information about Mix Presets.

Roll and Crawl Effects

Roll and Crawl effects are supported by the Chyron iNFiNiT!, MAX!> or MAXINE!, but not Duet.

Because of restrictions in the Chyron Intelligent Interface, the Chyron DM must treat Roll and Crawl effects differently from Read effects. The ControlAir Workstation operator must be aware of these limitations whenever Roll or Crawl effects are included in a show.

One significant limitation of the Intelligent Interface support for Roll and Crawl effects is that the DM cannot detect when the effect has completed as it can with Read effects. Therefore, it is the responsibility of the ControlAir Workstation operator to determine when the effect has completed and manually cue the next event. The next event can be manually cued by either by positioning the cursor on the on-air event and pressing the STOP key or by positioning the cursor on the next event and pressing the CUE key.

Another significant limitation is that once a Roll or Crawl effect is cued, the Chyron is in a special state awaiting the trigger to start the effect and will not process other Intelligent Interface commands correctly. For this reason, the Chyron DM must suspend updates while either a Roll or Crawl event is in the cued or playing state. Changes made to the playlist or any of its events will not be reflected on the Chyron until the ControlAir Workstation operator signals the end of the effect as indicated in the preceding paragraph.

Another significant limitation applies only to Crawl effects. The Chyron DM implements Crawl effects using the Chyron Serial Crawl option. This option insures the correct formatting of text and allows the DM to build these events in the background. However, there is a very serious limitation in the Intelligent Interface implementation of the Serial Crawl. After the ControlAir Workstation operator presses the PLAY key, the Crawl cannot be aborted from the ControlAir Workstation keyboard*.* The effect will stop on its own when all the text has "crawled" across the screen. The only way to abort a Crawl effect before it completes is by pressing the ESC key on the Chyron keyboard. (The ControlAir Workstation operator can un-cue a Crawl event with the STOP key. And the STOP key can also be used after the Crawl effect has finished to auto-cue the next event.)

The Chyron DM does provide for rolling more than one page of text. However, there are some limitations that the user must consider. Multi-page Roll effects are entered into the iNEWS story as a production cue referencing a Roll effect that specifies how many pages are to be rolled. Following that cue, the subsequent pages must also be entered as production cues within the same story. If there are not enough production cues for the Chyron DM's device in the story, only the cues entered will be rolled. The addresses for each page of the Roll effect must be sequential. Therefore, they must be assigned by the iNEWS Server – static supers cannot be used. See Roll Effects on page 22 in the "iNEWS Resource Files" section for details on how to include static pages in a multi-page roll.

Multi-page Roll effects are treated as a block by the Chyron DM. CUE and PLAY status is set for every page of the effect. However, the ControlAir Workstation does not recognize the connection between the events in a multi-page Roll and cannot advance the cursor past the block when the PLAY key is pressed. Therefore, it is the responsibility of the ControlAir Workstation operator to determine where the block ends from the status displayed and advance the cursor to the next event.

Command Effects

Command effects are supported by all Chyron CGs: iNFiNiT!, MAX!>, MAXINE! and Duet.

Command effects are user-defined command sequences that allow a site to use any Intelligent Interface commands to produce a wide variety of special effects. A command effect is divided into three separate parts: CUE, PLAY and STOP. In some cases, the CUE commands may alter the current state of the Preview or Air channels and/or the associated buffers. And the STOP commands must return the CG to its previous state. For this reason, it may not be desirable to auto-cue an event using a command effect or to auto-cue the following event when the command effect is complete.

The definition of a command effect will specify whether or not the effect must be manually cued and/or manually stopped by setting an auto-cue and/or auto-stop attribute. The ControlAir Workstation operator should be familiar with the auto-cue and auto-stop attributes of the command effects available. If an effect is not auto-cue, the operator must position the cursor over the event and press the CUE key. If the effect is not auto-stop, the next event can be manually cued by either by positioning the cursor on the on-air event and pressing the STOP key or by positioning the cursor on the next event and pressing the CUE key.

Command effects may also provide multiple trigger support for more complex effects or animations. The definition of a command effect will specify how many triggers are required to step through the complete effect. When an effect requires more than one trigger, the ControlAir Workstation does not advance the cursor to the next event until the PLAY key has been pressed the appropriate number of times. To abort a multi-trigger effect without playing to completion, press the STOP key or position the cursor on the next event and press the CUE key

The Chyron DM Window

The ControlAir Server program must be running before the Chyron DM or any other DM is started. All device managers attempt to connect to the Server upon launch and will fail if the ControlAir Server program is not running.

If the Chyron DM fails to connect to the ControlAir Server, close the DM window and restart both programs in the proper order.

Launching ControlAir programs can be done manually or automated through the use of the ControlAir Manager program. For more detailed information about starting and stopping device managers and other ControlAir components, refer to Chapter 6 of the *iNEWS ControlAir Installation and Operations Manual.*

The following sections describe some of the Chyron DM window options. They include pull-down menus to set the reporting levels for diagnostic logs and user error/warning messages, a display of the active playlists, a communications reset button, and a scrollable diagnostics window.

Setting Message Levels

The Messages list allows the user to select the level of Error, Warning or Information messages the system returns to the ControlAir and iNEWS Workstations. The options are: errors only, error and warning messages, or all messages, including those that are information only. For details on which messages fall into which category, see the `[Dictionary]` section of the DM configuration file (DMP) on page 10.

The graphic below illustrates setting the Messages level.
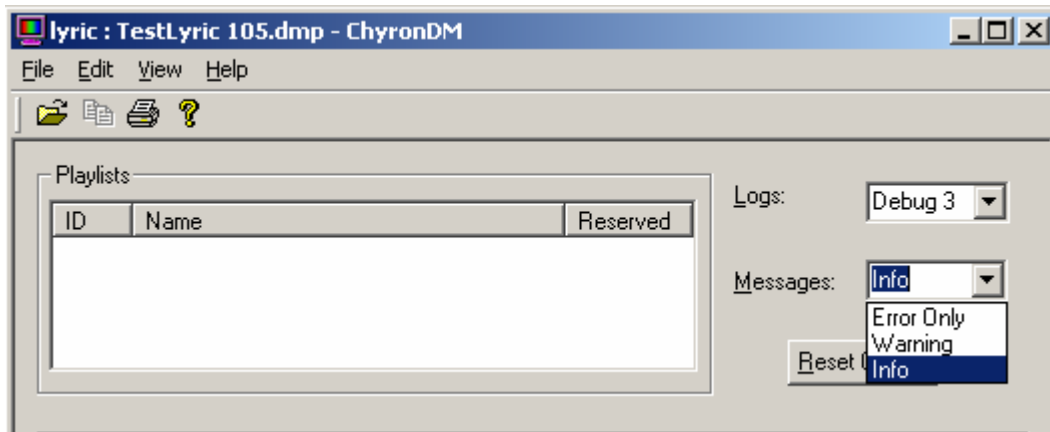
Setting Logging Levels

The Logs list allows the user to select the level of diagnostics that will be displayed in the DM's diagnostic window and in the log file on the hard disk if the `LogToFile` option is enabled in the DMP file. The options include all the user message levels plus three additional levels of diagnostics. The Debug 1 level includes state changes and more detailed descriptions of any errors that may have occurred. Debug 2 gives more details and reports any conditions that, while not errors, may be cause for concern. Debug 3 displays the serial traffic between the DM and the CG. Setting the diagnostics level lower may improve performance slightly, but when attempting to diagnose problems, setting it to the highest level is recommended.

The graphic below illustrates setting the Logs level. The Diagnostics window contains several Debug 1 level diagnostics indicating a successful DM startup.
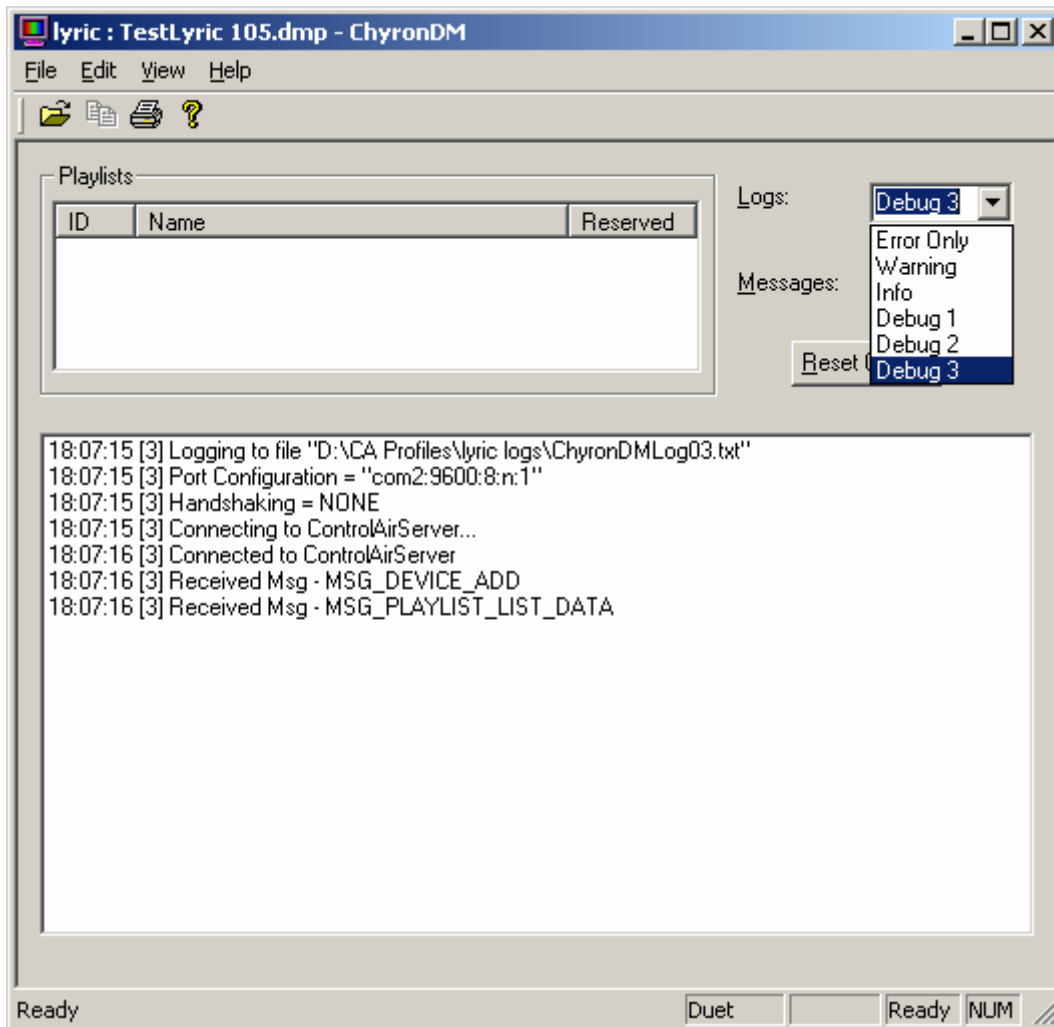
The Reset Button

Pressing the Reset Chyron button, located just below the Messages menu, forces a polling message to be sent to the CG. This provides a means for quickly resetting the serial connection to the CG after correcting the problem that has taken that connection off-line. It may also be used to test the serial connection without loading playlist data.

The Playlist Window

The Playlist window displays all rundowns loaded to the Chyron DM for quick reference. The data includes the ID number assigned by the ControlAir Server, rundown name and reserve status.

The Diagnostics Window

The Diagnostic window displays all the user and diagnostic messages generated by the Chyron DM. These same diagnostics are saved to a log file on the hard disk if the `LogToFile` option is enabled in the DMP file. The Logs menu setting determines the level of diagnostics that are displayed in this window. See "Setting Logging Levels" on page 26 for more details.

The graphic below illustrates a Chyron DM display during normal operations. The Playlist window shows the two loaded rundowns. The Diagnostics window shows the most recent diagnostics messages.
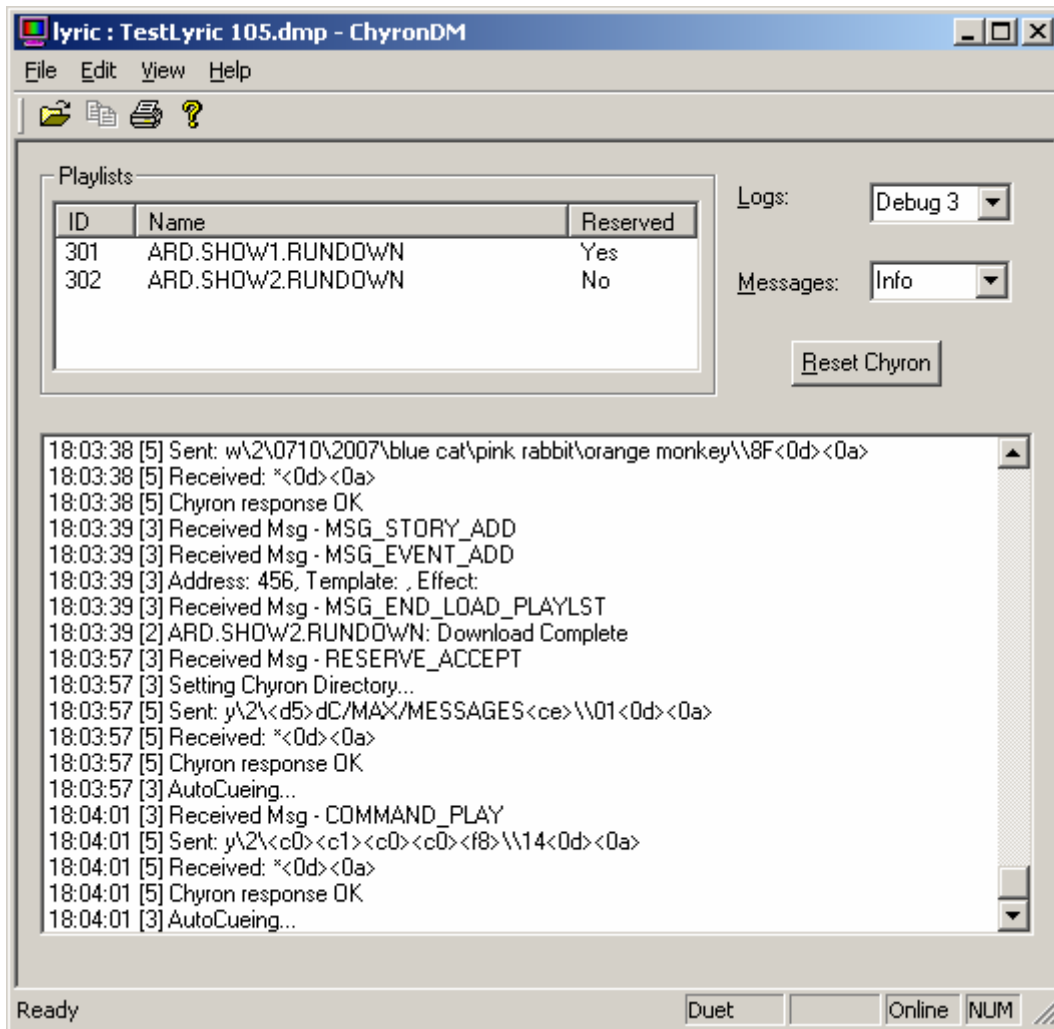
Error Handling

The following section lists error and warning messages that are specific to the Chyron DM. For additional information about ControlAir troubleshooting, refer to Chapter 7 of the *iNEWS ControlAir Installation and Operations Manual*. General ControlAir error and warning messages are described in Appendix A of that manual.

Chyron DM error messages are listed in this section in alphabetical order. Each message is listed in a separate paragraph in the following format:

Error: Error or warning message text
Location: Where the message will be found
Category: Error type: run-time or configuration
Dictionary Token: Token from the `[Dictionary]` section of the DMP file
Action: What action to take to correct the problem.

The **Error** shows the error message itself, although some words are replaced with italicized words indicating their purpose. For instance, if an actual error message appears as "Chyron error return: 000040B2", the corresponding error message in this section will be " Chyron error return: *Chyron-error-code*."

Error: Aborted
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time error
Dictionary Token: "Aborted"
Action: The Chyron DM has encountered a very serious internal error and cannot continue. The DM has exited and must be restarted. Report this message directly to Avid Customer Support.

Error: Cannot build super: *address-of-super*
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time warning
Dictionary Token: "BuildFailed"
Action: The Chyron DM was unable to build the identified super because of some error in the event information. The problem may be a missing template file or undefined effect. Another message will have preceded this one explaining the cause of this failure. Identify the cause of the failure and correct it.

Error: Chyron error return: *Chyron-error-code*
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time error
Dictionary Token: "ChyronErrorReturn"
Action: The CG has responded to a request from the Chyron DM with an Intelligent Interface error code. The Chyron error code is included with this message. These error codes cover a wide range of problems. See Appendix A of the *Chyron Intelligent Interface Option Handbook* for an explanation of the specific error. Identify the cause of the error and correct it.

Error: Cannot cue: *address-of-super:* Invalid speed value: *speed-number*
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time error
Dictionary Token: "CueFailed" and "InvalidSpeed"
Action: The Chyron DM was unable to cue the identified super because of an invalid Roll or Crawl speed. The speed value is defined with the Roll or Crawl Effect the DMP file for the Chyron DM. Locate the effect and correct the speed value. Save the DMP file and restart the DM.

Error: Cannot cue: *address-of-super:* Unknown effect: *effect-name*
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time error
Dictionary Token: "CueFailed" and "UnknownEffect"
Action: The Chyron DM was unable to cue the identified super because it could not find the effect specified in the event's style. Ensure that the right style is used in the Rundown story production cue. Locate the style in the SYSTEM.RESOURCE story and ensure that the referenced effect is properly defined in the DMP file for the Chyron DM. If the wrong style is assigned to the super, change the production cue and save the rundown story; the monitor server will update the Chyron DM playlist. If changes are needed in the Resource Story, save it, stop and re-load the monitor server. If changes are made in the DMP file, save it and restart the Chyron DM.

Error: Lost connection to the CG
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time error
Dictionary Token: "LostConnection"
Action: The Chyron DM has lost the serial connection to the CG. This condition is reached when no response is received from the CG after resending a command for the specified number of retries. All supers in the playlist will be given an **EVENT_UNAVAILABLE** status. Check the serial connection to the CG. Ensure that the CG is running and in Message Compose mode. The Chyron DM will begin polling the CG at an interval specified on page 9 in the [Communications] section. After the problem is

corrected, the DM will re-establish the serial connection when the CG responds to its next polling request. Or the user can force a polling request by pressing the Reset button on the DM window.

Error: Regained connection to the CG
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time error corrected
Dictionary Token: "RegainedConnection"
Action: The Chyron DM has restored serial communications with the Chyron. The serial connection had been lost because the CG was not responding to DM commands. When the connection was lost, the Chyron DM began polling the CG at a specified interval, and the CG has now responded to one of those polling messages. The DM will update the CG with any changes that took place while the connection was off-line. All previously built supers will be reset to an **EVENT_AVAILABLE** status.

Error: Stopped
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time warning
Dictionary Token: "Stopped"
Action: Someone has closed the Chyron DM window and the DM has exited. Restart the DM if necessary.

Error: Translated text too long
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time error
Dictionary Token: "TextTooLong"
Action: Character mapping has expanded the length of the CG text to beyond the limits set by the Chyron DM. This is very unlikely because it means the text would have doubled in length. The iNEWS Server limits CG text to 2000 characters and the Chyron DM will support 4000 characters of translated text. In most cases, only Crawl text will ever approach those limits. If Crawl text does exceed the 4000 character limit, the super will fail to cue. Check the Character `[Mapping]` section of the DMP file to ensure there are no errors there. If mapping must double the message text, reak the message text into smaller units.

Error: *address-of-super:* Unknown effect: *effect-name*
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time warning
Dictionary Token: "UnknownEffect"
Action: The Chyron DM was unable to build the identified super because it could not find the effect specified in the event's style. Ensure that the right style is used in the rundown story production cue. Locate the style in the `SYSTEM.RESOURCE` story and ensure that the referenced effect is properly defined in the DMP file for the Chyron DM. If the wrong style is assigned to the super, change the production cue and save the rundown story; the monitor server will update the Chyron DM playlist. If changes are needed in the `SYSTEM.RESOURCE` Story, save it, stop and re-load the monitor server. If changes are made in the DMP file, save it and restart the Chyron DM.

Error: Unknown Chyron return: *return-string*
Location: ControlAir Workstation and/or iNEWS Workstation
Category: Run-time error
Dictionary Token: "UnknownReturn"
Action: The CG has responded to a request from the Chyron DM in a way not defined by the Intelligent Interface protocol. This may indicate problems with the serial line. Check that the baud rate and word length setting match those of the CG. If the cause cannot be determined, report this error to Avid Customer Support.

Copyright and Disclaimer