CONVERGING SYSTEMS

TechNotes

Revision 1/2/2025

Create Custom Effects (For Effect 1)

Using Built-in e-Node Web Pages (Web Pilot)

Overview:

An Effect is an automatic sequencing of one or more static colors which provides the illusions of motion or an animated light show. Within each ILC-x00 controller and/or each DMX fixture connected to an e-Node, there may be one or more **Effects** available, but within each unit there is a least one customizable Effect, known as **Effect(1)**, which can be customized by an installer or dealer.

This document explains how to create a custom effect for **Effect(1)**, based on 1 to 24 user or installer custom-selected colors/levels. This is typically used for clients who may wish to play a holiday sequence of Green and Red, for instance or Red/White/Blue, which would repeat indefinitely or until an OFF, STOP or other color command was issued. More sophisticated techniques exist where nearly an unlimited number of "shows" can be supported but in this case utilizing the memory and intelligence of 3rd party automation platform where customized macros can be run. This technique is separately documented in a separate document (see xxx).

In summary, there are three distinct methods by which **EFFECT(1)** can be programmed. These are

Type	Programming Tool	Method
1	E-Node (Integrated) Web Pilot	-Follow the steps under Type 1 Programming below
2	Automation GUI (within Control4, Crestron, Elan, TI for instance)	-See Type 2 details.
3	Automation System Built-in macros (within RTI, Creston for instance)	-See Type 3 details

Over the next few pages can be found detailed instructions for Type 1 programming. In addition, for advanced programming techniques, details relating to Type 2 and Type 3 are also provided. .

Type 1 Programming (through e-Node Web-Pilot)

This section explains how to create a custom Effect 1 based on customer or installer-selected colors/levels using the e-Node Web-Pilot Web Page tools.

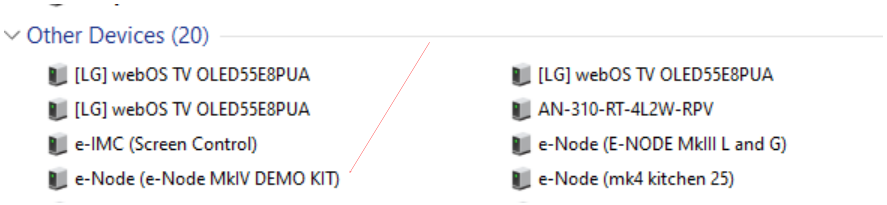
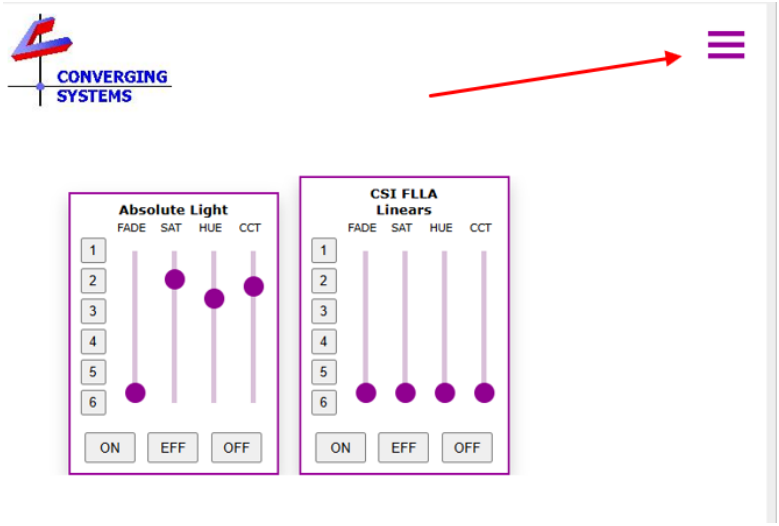
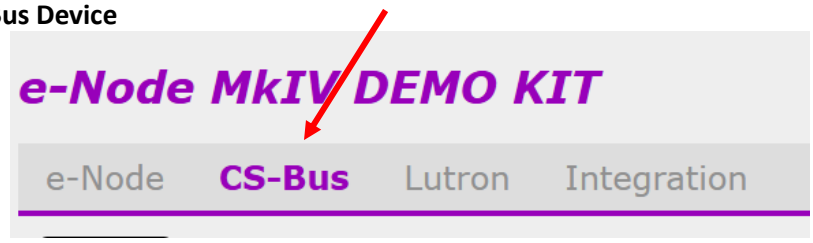
Required Tools/Information:

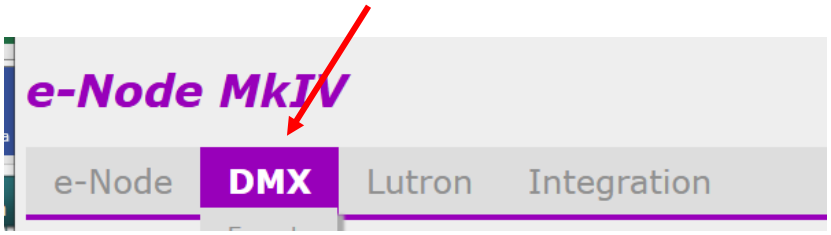
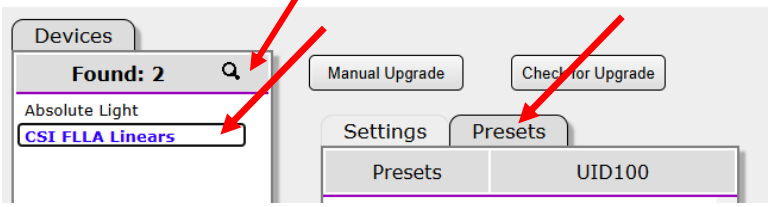
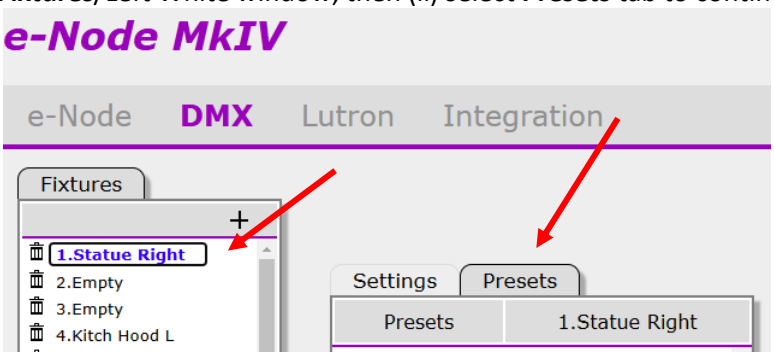
You will need the following:

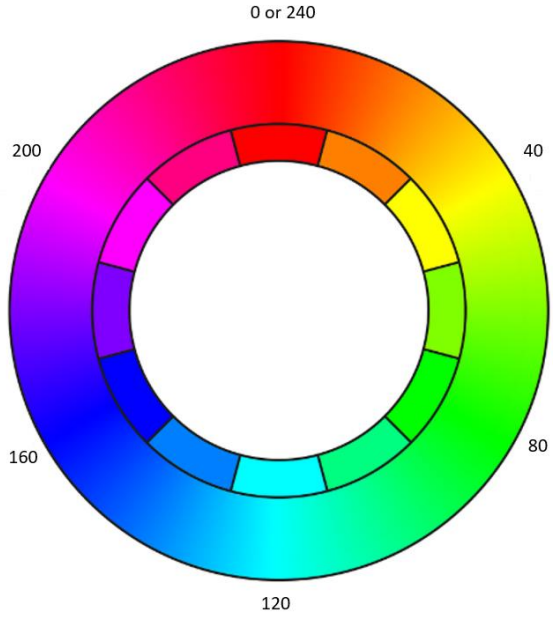
1. Access to the IP address for the e-Node to which your previously set-up load(s) is(are) connected.
   Note: Currently, only **Pure Mode controllers** (using ILC-xxx controllers) and **DMX Mode-fixtures** discovered/established through the e-Node commissioning process can support **Effect 1**. Discovered DALI fixtures currently do not support Effect 1.

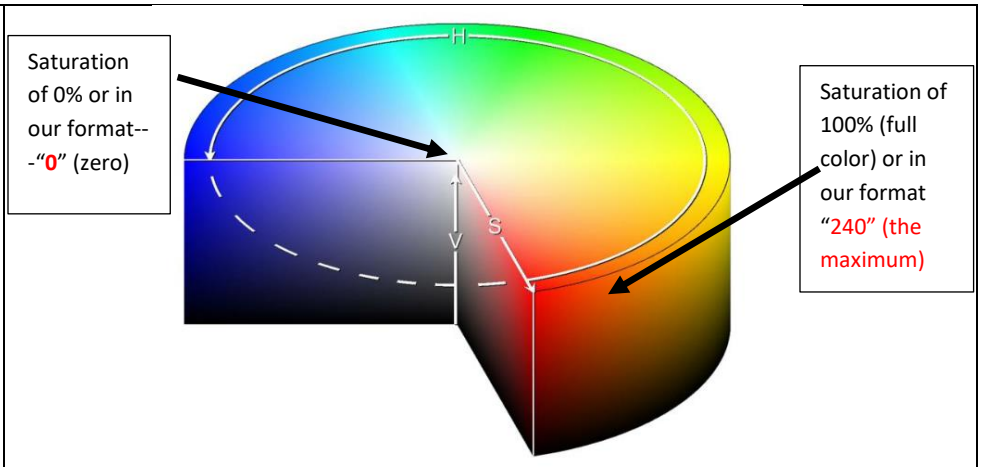
2. Knowledge of what colors/color temperatures you wish to include in your custom **Effect 1** program.

Follow the below Step by Step directions to start creating your custom EFFECT 1 show.

Step	Tasks	Detail
P-1a	Launch e-Node (embedded) web page tools	-On a Windows PC, find the e-Node by opening File Explorer  and search for the e-Node within **Networks/Other devices**.  - Double click on the uPnP discovered e-Node (see above) to access its embedded webpages. -Next, select the **Settings** icon (hamburger) shown below to access the e-Node's embedded web tools. 
P-1b	Select **CS-Bus**, or **DMX** device tab. **Note**: Currently **Effect 1** is not implemented for DALI fixtures.	-**CS-Bus Device** 

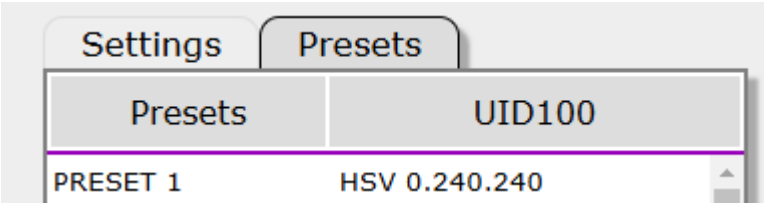
		-**DMX-Device** 
P-1c	Select specific **Pure Mode** or **DMX Mode** device individually to configure color/CCT entries for Preset 1.	-**Pure Mode device**. (i) Select **spyglass** to initially discover CS-**BUS devices** and then (ii) mouse select applicable load within **Devices**/Left White window. Finally, select the **Presets** tab to continue.  -**DMX Mode device.** Under **Fixtures**, (i) mouse select applicable DMX fixture within **Fixtures**/Left White window, then (ii) select **Presets** tab to continue. 
P-1d	Understanding Color Space and Tunable White concepts and value assignments prior to creating your own **Effect 1** show.	Prior to programming your **Effect 1** show, it is useful to understand the values that will be entered by the installers to define accurately up to 24 discrete colors and/or CCT or Tunable White levels that will comprise “Effect 1” or the “show.” For more information on these two-color spaces see below and click on the applicable links. HSV (Hue Saturation Value/Brightness color space) — Section 1 — Examples Correlated Color Temperature — Section 2 — Example

		Section 1--HSV Color Space -For devices that support full color, you can enter custom **H**ue/**S**aturation/**Value-B**rightness (HSV or HSB) values to describe any one of 16.9 million colors The three (***required***) individual components to **HSV** are as follows: ➢ **Hue** or "color" which ranges from 0 to 240 in a perfect circle. See absolute values below associated with primary and secondary colors and select (i) an absolute value (see numbers specified below) for primary and secondary colors, or (ii) an approximation between any two absolutes for all other colors.  ➢ **Saturation**, or the absence or presence of white in that color, which ranges from 240 (fully saturated color) to 0 (which appears white or unsaturated).



- **Brightness**, works in conjunction with **Hue** and **Saturation** and describes the brightness or intensity of the color, where 0 is completely black, and 240 reveals the most color in terms of brightness.

Example: Assume for the purposes of this example, you wish the first color to be **RED** at full brightness. The **HSV** representation for **RED** at full brightness would be **0.240.240** where the first entry is HUE (of "0"), the second entry is full saturation ("240"), and the third entry would be full brightness ("**240**"). So here, enter **HSV** to instruct the color computer you are in HSV color space. Then leave a space and enter the above three HSV values with **periods (not commas)** between them as shown below.



Other Color Examples: See table below for other common HSV values for popular colors.

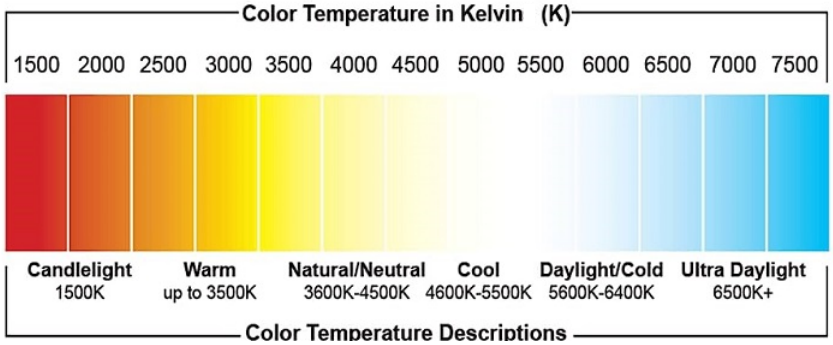
HUE	HSV shorthand value	Exact entry within Web Pilot
RED	0.240.240	HSV 0.240.240
YELLOW	30.240.240 or 40.240.240	HSV 30.240.240 HSV 40.240.240
GREEN	80.240.240	HSV 80.240.240
CYAN	120.240.240	HSV 120.240.240
BLUE	160.240.240	HSV 160.240.240
MAGENTA	200.240.240	HSV 200.240.240
Purplish RED	239.240.240	HSV 239.240.240

Section 2: CCT+ Intensity Model

-For devices that support **C**orrelated Color **T**emperature (CCT) + **B**rightness levels, you can enter custom **CCT** values + **Brightness** levels.

The two (***required***) individual components to **CCT+INT** are as follows:

- **CCT** or color temperature expressed in degrees Kelvin is the color temperature in Kelvin (K) which typically ranges from 1700K to 7000K or higher. The following image characterizes popular descriptions that are used to described CCTs. When entering values into our system, enter the any four-digit number between the warmest (lowest number) and the coolest (highest number) ***without*** the K designation.



- B**rightness**, works in conjunction with **CCT** and describes the brightness or intensity of the CCT (or Tunable White) level, where 0 is completely black, and 240 reveals full brightness for any CCT level selected.

Note: ***You must enter a brightness level in CCT Mode (as well as in HSV) mode in order for the luminaire to turn on.***

Example: Assume for the purposes of this example, you wish the first lighting level to be warm white (2700K) at full brightness. The **CCT + Intensity** representation for 2700K at full brightness would be **2700.240** where the first entry is CCT (here "**2700**"), and the second entry for full brightness (here "**240**"). So here, enter **TW** to instruct the color computer that you are in CCT+INT mode. Then leave a space and enter a four-digit (supported) value for CCT in degrees Kelvin. **Finally, and most importantly, enter a period and the brightness level with a period between them (from 0~240)**.

		PRESET 1 TW 6000.240 Other CCT Examples: See table below for other common CCT entries **CCT level** / **Intensity Level** / **CCT+INT shorthand value** / **Exact entry within Web Pilot** **Warm White** / Full Intensity-240 / 2700.240 / TW 2700.240 **Warm White** / Half Intensity-120 / 2700.120 / TW 2700.120 **Warm White** / Off / 2700.0 / TW 2700.0 **Cool White** / Full Intensity-240 / 5000.240 / TW 5000.240 **Cool White** / Very dim-40 / 5000.40 / TW 5000.40 **Cool White** / Off / 5000.0 / TW 5000.0 Now that you understand the coding necessary to create an **Effect 1** show, proceed to the next section to create your show.

<table>
<tr>
<td>P-1e</td>
<td>Create your custom EFFECT 1 show</td>
<td>You can use this table below to create the colors/ CCT+INT levels that will be cycled through for your Effect 1 show. You can have up to 24 unique HSV colors or CCT+INT states within your show. Once triggered, the Effect 1 will play through all Preset Numbers 1 through the last preset number (24) until either (i) an END is encountered (see section P-1f) in any Preset location after Preset 1 or (ii) Preset 24 is encountered. At such point, the show will repeat itself in perpetuity until a STOP or any other command is received which automatically interrupts the show (such as any color/CCT command or OFF command from a third-party automation system).
<table>
<tr><th>Preset Number</th><th>Description of lighting state</th><th>Syntax to be entered within Presets Tab</th></tr>
<tr><td>1</td><td></td><td></td></tr>
<tr><td>2</td><td></td><td></td></tr>
<tr><td>3</td><td></td><td></td></tr>
<tr><td>4</td><td></td><td></td></tr>
<tr><td>5</td><td></td><td></td></tr>
<tr><td>6</td><td></td><td></td></tr>
<tr><td>7</td><td></td><td></td></tr>
<tr><td>8</td><td></td><td></td></tr>
<tr><td>9</td><td></td><td></td></tr>
<tr><td>10</td><td></td><td></td></tr>
<tr><td>11</td><td></td><td></td></tr>
<tr><td>12</td><td></td><td></td></tr>
<tr><td>13</td><td></td><td></td></tr>
<tr><td>14</td><td></td><td></td></tr>
<tr><td>15</td><td></td><td></td></tr>
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<tr><td>18</td><td></td><td></td></tr>
<tr><td>19</td><td></td><td></td></tr>
<tr><td>20</td><td></td><td></td></tr>
<tr><td>21</td><td></td><td></td></tr>
<tr><td>22</td><td></td><td></td></tr>
<tr><td>23</td><td></td><td></td></tr>
<tr><td>24</td><td></td><td></td></tr>
</table>
</td>
</tr>
<tr>
<td>P-1f</td>
<td>Use of END to signal Jump to Top of Table to continue show.</td>
<td>After you have entered your show starting value within Preset 1 and them each subsequent color/CCT state that is desired to play sequentially thereafter, enter the word END on the next Preset line to stop forward motion within the Show table but instead to instruct the show logic to jump to Preset 1 and restart the same show once again (and again and again).

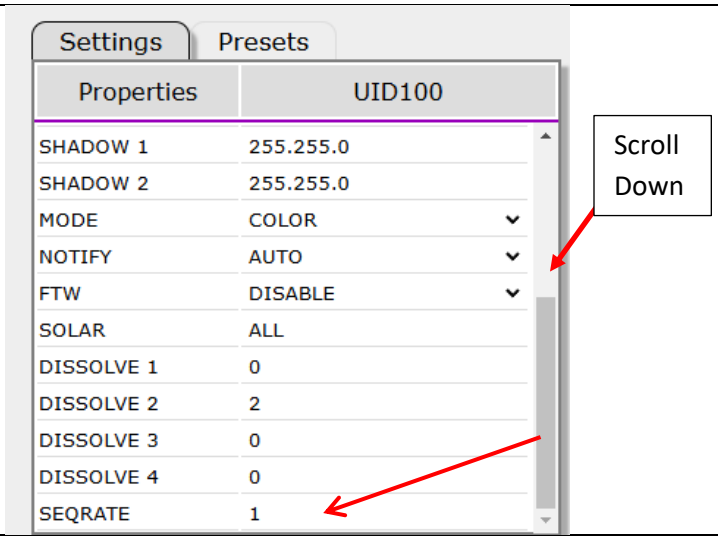
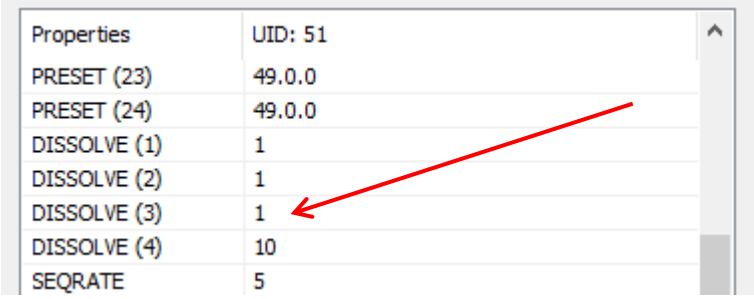
Here is an example of a show that will play RED, COOL WHITE, and BLUE, and then repeat in perpetuity until interrupted.</td>
</tr>
</table>

<table>
<tr><td></td><td></td><td>
<table>
<tr><th>Preset Step</th><th>Description of Lighting Step</th><th>Syntax to be entered within Presets Tab</th></tr>
<tr><td>Preset 1</td><td>Red (full brightness)</td><td>HSV 0.240.240</td></tr>
<tr><td>Preset 2</td><td>Cool White (full brightne4ss)</td><td>CCT 5000.240</td></tr>
<tr><td>Preset 3</td><td>Blue</td><td>HSV 160.240.240</td></tr>
<tr><td>Preset 4</td><td>Recycle back to top to list</td><td>END</td></tr>
<tr><td>Preset 5-24</td><td>Anything here will be overlooked</td><td></td></tr>
</table>
</td></tr>
<tr><td>P-1g</td><td>Advanced Topics. How to vary the time the luminaire is illuminated per step and how long the dissolve time is (in seconds) between light output states.</td><td>There are two parameters with associated installer editable values that fine-tune how Effect 1 will operate. You will find that by adjusting these two parameters, you can customize Effect 1 to suit your exact requirements. These parameters are as follows:

➢ SEQRATE—How long the luminaire stays on (in seconds) before dimming/transitioning to the next state. (range 1~64,000 seconds).
➢ DISSOLVE (3) —How long the transition/dissolve takes (in seconds) between sequential states. The longer the dissolve rate, the smoother the transition. (Range 1~64,000 seconds)

These two parameters are sometimes supported within third-party automation systems either as supported commands or raw commands. And in cases where they are not supported, the installer can adjust their values within the e-Node’s web interface. For more information on reviewing the current settings for these two parameters as well as learning how to adjust them, see Step P-1h (for SEQRATE) and/or Step P-1i (for DISSOLVE (3))below.</td></tr>
<tr><td>P-1h</td><td>Using SEQRATE to vary the ON time for each step of an Effect 1 show.</td><td>The SEQRATE editable parameter specifies the time in seconds (after any dissolve transition) that the level specified in each Preset n step is maintained before the automatic transitioning to the next light level within the Effect 1 show sequence.

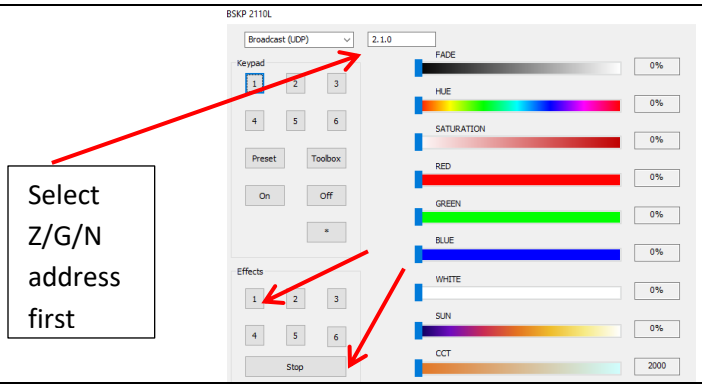
-Within CS-BUS or DMX tab (within the e-Node’s webpage) for each lighting controller or fixture that is desired to be customized, open Settings and scroll down to the SEQRATE setting and adjust as required. The longer the SEQRATE time, the longer each step will “play” before the next transition/dissolve occurs.</td></tr>
</table>

		
P-1i	Using **DISSOLVE (3)** to vary the transition time between each step in an **Effect 1** show.	The **DISSOLVE (3)** editable parameter specifies the time in seconds during which the transition from one state to another for **EFFECT (1)** will occur**.** **-**Within **CS-BUS** or **DMX** tab (within the e-Node's webpage) for each lighting controller or fixture that is desired to be customized, open **Settings** and **scroll down** to the **DISSOLVE (3)** setting and **adjust as required.** ***The longer the DISSOLVE (3) time, the smoother the dissolve will be between lighting steps in an Effect 1 show.*** 

Testing Effect 1

Test EFFECT (1) using Virtual Terminal and Finish Up GUI Programming

P-2a	Launch e-Node Pilot Virtual Terminal. For more information on e-Node Pilot software, see here.	-Select View/Virtual Terminal/Lighting to expose the Virtual Lighting Terminal

		
P-2b	Select **EFFECT (1)** to execute Effect	Any connected color controllers/fixtures will run through the programmed Effect 1 show.
P-2c	Hit the **Stop** button to stop sequence	Press Stop to stop sequence (or any other command)

Create a GUI Button for Effect(1) to activate an Effect 1 show.

P-3a	Create a GUI Button for **EFFECT (1)** within you automation software.	Program your automation system or lighting system with a button entitled Effect (1) or similar.  Connect this button to our command for **Effect (1)**. If you had a device with an address of 2.1.1 here would be the command **#2.1.1.LED=EFFECT,1;<cr>**

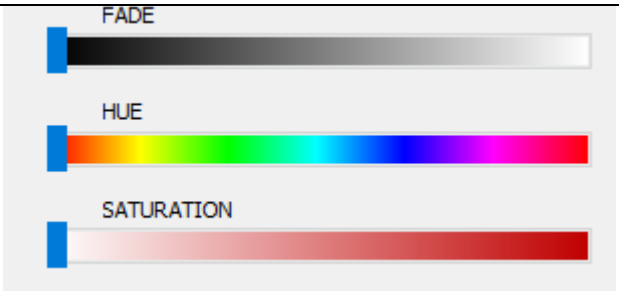
Type 2 Programming (through Automation or Lighting Panel)

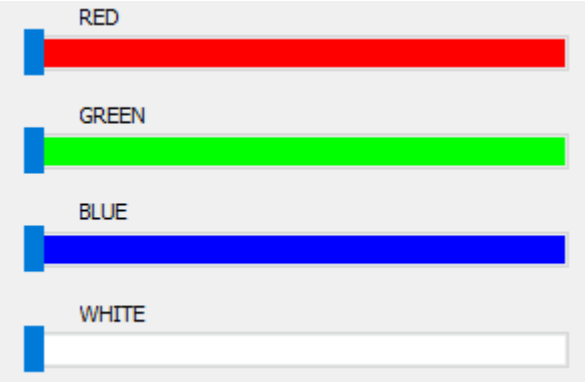
This section explains how to create a custom effect based on customer or installer-selected colors using a third-party Automation or Lighting System. We will describe this process in terms of **Type 2** programming.

Required Tools:
You will need the following:
1. Compatible Automation or Lighting Panel.
2. Previously set ILC-x00 controllers and/or DMX fixtures addressed with UIDs and non-zero **Z**one/Group/**N**ode address(es) (see Quick Start Guides for more information).

Create tasks in your Automation/Lighting System

Step	Tasks	Detail
A-1a	Create three sliders for **Hue/Saturation** and **Brightness** (or	Here is a sample of what could be created here to select colors in the preferred Hue/Sat/Brightness color space

<table>
<tr>
<td></td>
<td>alternatively R,G,B, or RGBW sliders as appropriate)</td>
<td> 

If you operating in the RGBW color space, go ahead and create four sliders in this case.

</td>
</tr>
<tr>
<td>A-1b</td>
<td>Create the number of STORE(n) buttons as the number of colors that will need to be stored for your color effect, PLUS 1.</td>
<td>In this case, you will need 3+1 STORE buttons to Store your three colors (plus the 4th button to store the special JumpToCommand).
Note: In this example just for aethestics we have created 6 buttons.
 

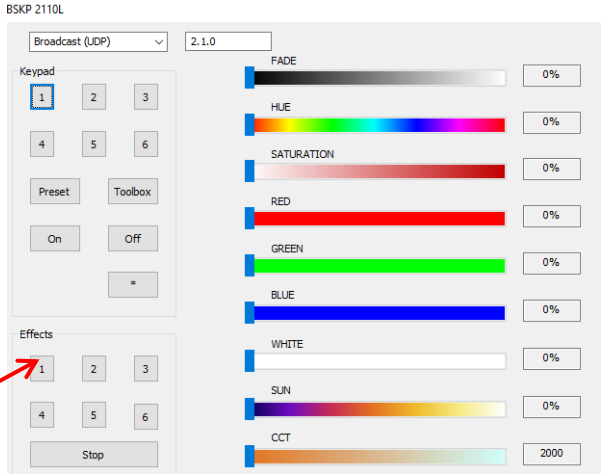
-Program these buttons to send out the following commands (use your own Zone/Group/Address as appropriate).
<table>
<tr><th>Button</th><th>Command</th></tr>
<tr><td>1</td><td>#2.1.1.LED=STORE,1;<cr></td></tr>
<tr><td>2</td><td>#2.1.1.LED=STORE,2;<cr></td></tr>
<tr><td>3</td><td>#2.1.1.LED=STORE,3;<cr></td></tr>
<tr><td>4</td><td>#2.1.1.LED=STORE,4;<cr></td></tr>
</table>
</td>
</tr>
<tr>
<td>A-1c</td>
<td>Create a One or more SEQRATE Buttons to select variable numbers (seconds) to transmit as the SEQRATE</td>
<td>The SEQRATE command specifies the time (after any dissolve) that the preset color is maintained before transitioning to the next color in sequence.

Various automation systems have motifs for keypad or dropdowns, etc. to pick number to concatate to a command. Or for more simplistic cases, just create a few buttons and hard coat them with a specific nuber of seconds.</td>
</tr>
</table>

		 In our case, we may want to allow a user to change the **SEQRATE** from 1 to x. In our example, we specified a **SEQRATE** of 5 (seconds), so at minimum create a button that can transmit our **SEQRATE** command and set it to 5 Here would be the comman for a device with Z/G/N address of 2.1.1 **#2.1.1.LED.SEQRATE=5;<cr>**
A-1d	Create one or more **DISSOLVE (3)** Buttons to select variable numbers (seconds) to transmit as the **DISSOLVE (3)** command	The **DISSOLVE (3)** command is the period of time for transition from one state to another for **Effect (1)**. Various automation systems have motifs for keypad or dropdowns, etc. to pick number to concatate to a command. Or for more simplistic cases, just create a few buttons and hard coat them with a specific nuber of seconds.  In our case, we may want to allow a user to change the **DISSOLVE (3)** from 1 to x. In our example, we specified a **DISSOLVE (3)** of 1 (second), so at minimum create a button that can transmit our **DISSOLVE (3**) command and set it to 1.

		Here would be the command for a device with Z/G/N address of 2.1.1 **#2.1.1.LED.DISSOLVE.3=1;<cr>**
1f	Create an **EFFECT(1)** button to execute the customizable **Effect** feature	Here is a generic button labeled as the **Effect(1)** button.  Here would be the command for a device with Z/G/N address of 2.1.1 **#2.1.1.LED=EFFECT,1;<cr>**

Test Effect(1) using Virtual Terminal and Finish Up GUI Programming

2a	Launch e-Node Pilot Virtual Terminal. For more information on e-Node Pilot software, see here.	Select View/Virtual Terminal/Lighting to expose the Virtual Lighting Terminal 
2b	Select **EFFECT (1)** to execute Effect	Any connected RGB LEDs will run through the sequence, Red, White, Blue, Red, White, Blue…
2c	Hit the **Stop** button to stop sequence	Press Stop to stop sequence (or any other command)

Example 2

Assume you have an installation in a major market upscale hotel that caters to NFL teams visiting for football games. The host hotel wants to welcome the incoming team by proudly displaying the team's colors throughout its lobby. As an option, we demonstrate how a pair of adjustment values for Dissolve Rate (period between the color being on) and Sequence Rate (period that the color remains on) can be set as well.

Unfortunately, within any ILC-x00 controller, there are only 24 storage registers available so in this example we will use the power of the automation system to store those colors prior to runtime and then rely on that automation system to properly (i) download those color entries including a **JumpToCommand** and then (ii) transmit the **EFFECT(1)** command any time a particular logo button is selected (the magic of macros). In effect, the automation system will be used to store colors, transmit those colors, and issue an **EFFECT(1)** command for any logos selected.

Because of the sophisticated nature of this operation, only Type 3 programming (with Automation System) is possible.

The GUI:
With an automation system, you could program 32 icons on you systems' GUI (don't be upset that we may not have selected your favorite team for our example).

Type 3 Programming (through Automation or Lighting Panel)

This section explains how to create a custom effect based on customer or installer-selected colors using a third-party Automation or Lighting System. We will describe this process in terms of Type 3 programming only.

Required Tools:
You will need the following:
1. Compatible Automation or Lighting Panel.

2. Previously set ILC-x00 controllers addressed with UIDs and Zone/Group/Node address (see Quick Start Guides for more information).

Background:
If you assume that you want to support logos for all NFL teams, and their respective colors, over 60 different colors would need to be programmed into an ILC-x00 device (but our controller only has 24 registers).

The easiest way to accomplish this task with any of our supported automation platforms (that support macros and the entry of RAW or ASCII commands) using our driver to do the of following ***harnassing the power of your automation system***:

- Store the first color into **PRESET(1)** on our controller (dynamically saved until the next color is downloaded into that location and therefore overwritten)
- Store the second color into **PRESET(2)** on our controller (dynamically saved until the next color is downloaded into that location and therefore overwritten)
- Store any remaining color()s) of the sequence into our controller into successive **PRESET(n)** locations until all colors are "saved"
- Store a final **JumpToCommand** (white 240.240.240) on our controller (dynamically saved until the next color is downloaded into that location and therefore overwritten)
- Send an execute **EFFECT,1** command which will then play those just written colors in a color sequence.
- Send optional SEQRATE and DISSOLVE(3) commands to impact the timing of the sequence

Case 1 (where there is not a white color in the teams logos-like the Buffalo Bills)

Under that logo would be a macro comprised of the following general steps:

Step	Actual programed sequence for Buffalo Bills (see below for RGB colors for team)	Notes
1	**#2.1.1.LED.PRESET.1=RGB,0.51.141;<cr>**	This sets their Nautical Blue into **PRESET(1)** in the RGB color space
2	**#2.1.1.LED.PRESET.2=RGB,198.12.48;<cr>**	This sets their Red into **PRESET(2)** in the RGB color space
3	**#2.1.1.LED.PRESET.3=RGB,240.240.240;<cr>**	This is a special **JumpToCommand** which is an alias for the color White (**240.240.240**). **Note**: Basically when we first encounter a **240.240.240** in any stored PRESET, ***we don't display it in*** the color sequence but we use it as a marker to go back to **PRESET(1)** and start over again on the motion sequence.
Optional entries to adjust the Sequence Rate and Dissolve Rate for EFFECT,1		

4	**#2.1.1.LED.DISSOLVE.3=n;<cr>**	Enter this command with a number for "n" indicating the time of transition (in seconds) between each Preset color turning on
5	**#2.1.1.LED.SEQRATE=m;<cr>**	Enter this command with a number for "m" indicating the time (in seconds) each PRESET color is ON before transitioning to the next color in the sequence.

Case 2 (where there is a white color in the team's logos-like the Dallas Cowboys)

Under that logo would be a macro comprised of the following generals steps:

Step	Actual programed sequence for Buffalo Bills (see below for RGB colors for team	Notes
1	**#2.1.1.LED.PRESET.1=13.37.76:<cr>**	This sets their Navy into **PRESET(1)** in the RGB color space
3	**#2.1.1.LED.PRESET.2=198.12.48;<cr>**	This sets their Silver into **PRESET(2)** in the RGB color space
5	**#2.1.1.LED.PRESET.3=240.240.239;<cr>**	This sets their White offset by just digit (so it is not seen as a white by our system) into **PRESET(3)** in the RGB color space
6	**#2.1.1.LED.PRESET.4=240.240.240;<cr>**	This is a special jump to command which is really a white, but when our Effect sequence sees a white it doesn't display it but just jumps back to Step 1 (**Preset1**). This step inserts the **JumpToCommand** into **PRESET(4)**
7	**#2.1.1.LED=EFFECT,1;<cr>**	This executes the **Effect(1)** command which then looks for entries in **PRESET**(1) to **PRESET**(n) where a 240.240.240 is ***first*** found and then disregards that 240.240.240 and simply performs a GOTO back to PRESET(1)
Optional entries to adjust the Sequence Rate and Dissolve Rate for EFFECT,1		
8	**#2.1.1.LED.DISSOLVE.3=n;<cr>**	Enter this command with a number for "n" indicating the time of transition between each Preset color turning on
9	**#2.1.1.LED.SEQRATE=m;<cr>**	Enter this command with a number for "m" indicating the time each Preset color is ON before transitioning to the next color in the sequence.

Appendix Colors for some NFL Teams

	Arizona Cardinals	RGB 155,39,67	RGB 0,0,0	RGB 240,240,240
	Atlanta Falcons	RGB 189,13,24	RGB 0,0,0	
	Baltimore Ravens	RGB 40,3,83	0 RGB 0,0,0	RGB 208,178,64
	Buffalo Bills	RGB 0,51,141	RGB 198,12,48	
	Carolina Panthers	RGB 0,136,206	RGB 0,0,0	RGB 165,172,175
	Chicago Bears	RGB 3,32,47	RGB 221,72,20	
	Cincinnati Bengals	RGB 251,79,20	RGB 0,0,0	
	Cleveland Browns	RGB 254,60,0	81,47,45	
	Dallas Cowboys	RGB 13,37,76	136,144,154	RGB 240,240,240
	Kansas City Chiefs	RGB 178,0,50	RGB 242,200,0	

	Los Angeles Raiders	RGB 196,200,203	RGB 0,0,0	
	New York Giants	RGB 25,47,107	RGB 202,0,26	RGB 162,170,173
	Tennessee Titans	RGB 100,143,204	RGB, 13,37,76	

Src: **http://teamcolorcodes.com/tennessee-titans-color-codes/**
https://www.thepaperframer.com/TeamColors.php?type=nfl