LONMARK®
Functional Profile:
Scene Controller
Overview

This document describes the profile for a scene controller object. There is no required hardware for this object.

Figure 1.1 Scene Controller Functional Profile

Example Usage

The scene panel output is connected to the scene controller input. Each lamp or group of lamps have their own controller. An optional control input is used for “manual” scene adjustment (master fade). Local control of a lamp can be done with a switch. When lamps are adjusted manually, a new scene can be stored using “learn current” configuration property. Configuration properties are not shown in this example.
Figure 1.2 Example
Object Details

The scene controller object is used to control scenes and fades. Input from an event triggering source e.g. a scene panel triggers the scene. Fade and delay times, and target values are stored in controller memory. Scene setup is done by sending values or storing current values under given scene number. Current values are obtained internally. Stored values are reported using scene configuration feedback output.

**Figure 1.3** Scene Controller Object Details

**Table 1.1** SNVT Details

<table>
<thead>
<tr>
<th>NV # (M/O)*</th>
<th>Name</th>
<th>In/Out</th>
<th>SNVT Type (SNVT Index)</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (M)</td>
<td>nviScene</td>
<td>In</td>
<td>SNVT_scene (115)</td>
<td>nv</td>
<td>Scene trigger input</td>
</tr>
<tr>
<td>2 (M)</td>
<td>nvoSwitch</td>
<td>Out</td>
<td>SNVT_switch (95)</td>
<td>nv</td>
<td>Control output</td>
</tr>
<tr>
<td>3 (O)</td>
<td>nviControl</td>
<td>In</td>
<td>SNVT_setting (117)</td>
<td>nv</td>
<td>Master fade control Input</td>
</tr>
<tr>
<td>4 (O)</td>
<td>nviSwitch</td>
<td>In</td>
<td>SNVT_switch (95)</td>
<td>nv</td>
<td>Direct control input</td>
</tr>
<tr>
<td>SCPT index (M/O)*</td>
<td>Name</td>
<td>Description</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------</td>
<td>-------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95 (O)</td>
<td>SCPTfadeTime</td>
<td>Default fade time to scene, if time not specified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>96 (O)</td>
<td>SCPTdelayTime</td>
<td>Default delay time to scene, if time not specified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52 (O)</td>
<td>SCPTminSendTime</td>
<td>Min. send time for network output</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* M = mandatory, O = optional

**Scene Trigger Input**

network input SNVT_scene nviScene;

This input network variable triggers a scene or loads the scene preset memory with current values. If the recalled scene number is not found in the preset memory, the controller takes no action. Learn command stores current control value in the preset memory under given preset number (see Boundary and Error Conditions).

**Valid Range**

The valid enumeration range is RECALL or LEARN with associated scene number (1 to 255). Scene number 0 is not used.

**Default Value**

The default value is scene number 0 meaning no control action.

**Switch Output**

network output SNVT_switch nvoSwitch;

This output network variable provides the switch output for an actuator.

**Valid Range**

The valid range is the range of SNVT_switch.
When Transmitted
Whenever the change is initiated by the application.

Update Rate
There is no maximum update rate. The default minimum update rate is 100 ms. Minimum update rate is optionally configurable.

Default Service Type
The default service type is acknowledged.

Optional Network Variables

Master Fade Input

network input SNVT_setting nviSetting;
This input network variable is used to adjust the scene output. The output is adjusted relative to the stored preset value. Every update adds transmitted value to the current output value. Fade values are accumulated separately thus preventing drift, if output value is adjusted to minimum or maximum limit. This input is provided mainly for manual control and it overrides and stops any ongoing fade. Command OFF shuts down the controller and command ON recalls the last scene. ON and OFF are fast commands overriding fade and delay times.

Valid Range
The valid enumeration range is OFF, ON, DOWN and UP. DOWN and UP range is 0,5 to 100%.

Default Value
The default value is OFF. This value causes no action after power up.

Direct Control Input

network output SNVT_switch nvoSwitch;
This optional input network variable provides a direct control method for the output (nvoSwitch). This input overrides other inputs or ongoing fades. It can be used for scene adjusting when “learn current” function is used.

Valid Range
The valid range is the range of SNVT_switch.

Default Value
The default value is state OFF, value 0.

**Scene Configuration Input**

network input SNVT_scene_config nviScenCf;

This optional input network variable is used to change scene setup and to read stored scene values. Enumerations:

- **SAVE** saves the preset.
- **CLEAR** clears the memory for given preset number.
- **REPORT** updates the configuration output with memory content.
- **SIZE** is used to report total number of scenes available in the controller.
- **FREE** is used to report number of free (unconfigured) scenes.

An alternative way of scene setting is file transfer or any type of local setting (e.g., slide potentiometers).

**Valid Range**

The valid enumeration range for request type is SAVE, CLEAR and REPORT with associated scene number (1 to 255). Scene number 0 is not used. When SIZE or FREE is used, scene number is ignored.

The valid value to go to is SNVT_switch value. Invalid value 255 is stored as OFF-state.

The valid fade time is 0,1 to 6553,5 seconds.

The valid delay time before fade is 0,1 to 6553,5 seconds.

**Default Value**

The default value is scene number 0 meaning no action.

**Scene Configuration Output**

network output SNVT_scene_config nvoScenFb;

This optional output network variable provides the scene configuration output. It is updated with the memory content of requested preset. If requested scene is not found in memory, enumeration is CLEAR and other fields, except scene number are cleared.

**Valid Range**

The valid enumeration range for request type is SAVE, CLEAR and REPORT with associated scene number (1 to 255). Scene number 0 is not used.

The valid value to go to is SNVT_switch value.

The valid fade time is 0,1 to 6553,5 seconds.

The valid delay time before fade is 0,1 to 6553,5 seconds.

**When Transmitted**

Whenever scene configuration input is updated.

**Update Rate**

There is no maximum update rate.
**Default Service Type**

The default service type is unacknowledged.

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**Configuration Properties**

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**Default Fade Time**

network input config SNVT_time_sec nciFadeTime;

This input configuration network variable is used to set fade time, if the time is set to 0 or learn current functionality is used. It is possible to learn scenes with different fade times by changing this configuration value for each scene before learn command is used.

**Valid Range**

The valid range is 0,1 to 6553,5 seconds.

**Default Value**

The default value is 1 sec.

**SCPT Reference**

SCPTfadeTime #95

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**Default Delay Time**

network input config SNVT_time_sec nciDelayTime;

This input configuration network variable is used to set delay time, if the time is set to 0 or learn current functionality is used. It is possible to learn scenes with different delay times by changing this configuration value for each scene before learn command is used.

**Valid Range**

The valid range is 0,1 to 6553,5 seconds.

**Default Value**

The default value is 0 sec.

**SCPT Reference**

SCPtdelayTime #96
**Minimum Send Time**

network input config SNVT_time_sec nciMinSendTime;

This input configuration network variable is used to set the minimum time between subsequent updates of network output (nvoSwitch).

*Valid Range*

Min. 0,1 seconds  
Max. 2,0 seconds

*Default Value*

0,1 seconds

*SCPT Reference*

SCPTminSendTime #52

**Data Transfer**

Manufacturer specific.

**Power-up State**

The object does not update any output values after power-up or reset.

Optional master fade input ON-command is undefined, if no scene has been recalled after power up. A default scene for this condition can be defined by the manufacturer. If no scenes are defined, output should go to max. value.

**Boundary and Error Conditions**

If the controller has not reached the target value when next preset is requested, previous target is ignored and new ramp is started from the current value.

When scene setting is done with nviScenCf, the controller accepts new scene numbers as long as it has capacity. If the controller memory is full, it ignores any further store commands. An error condition is reported using nvoScenFb with enumeration CLEAR and requested scene number indicating, that requested scene number is not stored in the memory.

**Additional Considerations**

Manual inputs for master fade and direct control will override and stop any fade in progress.