

## **XML Elements for Defining Virtual Application Screens for the Project54 MultiApp Application W. Thomas Miller, III**

### **Overview**

The Project54 MultiApp application is intended as a framework for implementing virtual applications which perform functions solely by fielding status messages from other applications and sending command messages to other applications (similar to the standard PatrolScreen application). The MultiApp application has no built-in user interface screens or messaging functionality. Rather, at run-time it builds interface screens for virtual applications whose functionality is described in XML files. Each file contains the XML description of a single virtual application with a single GUI interface, based on XML element definitions described in a separate document (*XML Elements for Defining GUI Screens for Project54 Applications*). The MultiApp application is the only “real” application and the virtual applications all run on the same MultiApp threads, using the MultiApp message queues. However, the MultiApp application registers a unique name alias with the Application Manager for each virtual application. Thus, each virtual application implemented by MultiApp appears to other applications as a unique application capable of sending and receiving Project54 messages. The MultiApp application can implement up to 32 simultaneous virtual applications.

The logical flow of a MultiApp virtual application is based entirely on responding to messages from the message queue (both externally and internally generated messages). Messages from the queue are classified into two categories consistent with the standard Project54 model for application-to-application feedback. *Status* messages include all messages which begin with “STATUS <rest of message>” (e.g. “STATUS STROBES OFF”, “STATUS SIRENMODE WAIL”). All other messages are interpreted as *command* messages (e.g. “STROBES OFF”, “WAIL”). Speech input messages (e.g. “SPEECHIN STROBES OFF”, “SPEECHIN WAIL”) are stripped of the “SPEECHIN” prefix and processed like other command messages.

The major functional XML elements (e.g. <button>, <lightset>, <textfield>) examine all status messages and change their visible state whenever a message matches one of their internal message templates. <action> XML elements examine all command messages and send specified messages to other applications whenever a command matches one of their internal command templates. In response to button press or release on the GUI, <button> elements send specified command messages to the virtual application itself, triggering matching <action> elements. <action> XML elements can send specified command or status messages to the virtual application itself (in addition to sending messages to other applications) resulting in a potential chain of actions or visible state changes triggered by a single incoming command message, speech command or button press.

All interface elements which are capable of displaying status contain member <state> elements and member <statusmessage> elements. Each <state> element defines the appearance and behavior of the parent element when in that state. The <state> elements are unique for each parent element type (i.e. the properties needed to draw a status light are different from those needed to draw a button). Each <statusmessage> element provides a template for one or more expected status messages, and a selector for a <state> element. The <statusmessage> elements are consistent for all parent element

types. When the template of a <statusmessage> element is matched by an incoming Project54 status message, the corresponding <state> is selected for the parent element, and the element is redrawn to reflect the new state.

Each <action> element contains member <command> elements and member message <elements>. Each <command> element provides a template for one or more expected command messages. Each <message> element provides a template for a message to be sent to another application (or to the same application). When the template of a <command> element is matched by an incoming command message, Project54 messages are sent according to the specifications in the corresponding <message> elements.

The Multiapp application loads the XML GUI screens specified via registry settings, registers an associated virtual application name for each GUI with the *Project54* Application Manager, and then manages message flow between the Application Manager and the loaded GUIs. The full details of the XML specification are presented in a separate document (*XML Elements for Defining GUI Screens for Project54 Applications*). This document discusses registry settings needed to implement virtual applications using Multiapp.

## Standard Registry Settings

### *.\Project54\AppManager\Applist*

The Project54 Application Manager *Applist* must contain a single reference to the MultiApp application, similar to standard applications. The Application Manager's *AppList* does not contain references to the individual virtual applications. The Application Manager loads the MultiApp, and then MultiApp creates one or more virtual applications. If it is desired to have a MultiApp virtual application be the first screen on system start-up, the Application Manager's "FirstApp" messaging parameter should be set to the messaging name of the MultiApp application itself (as defined in the *AppList*), not to the messaging name of the virtual application. The registry settings for the MultiApp application also contain a "FirstApp" messaging parameter which indicates which virtual application should appear first (see below).

### *.\Project54\MultiApp\Applist*

Each variable in this registry key corresponds to an independent virtual application. The variable name is the virtual application's messaging name. The value of the variable is either the name of a specific XML file which describes the virtual application, or the name of an application level registry key which contains information and settings for the virtual application.

If the value of the variable is the name of a specific XML file, the base registry key for the virtual application is assumed to be *.\Project54\MultiApp\*. Registry references embedded in the XML script are then resolved relative to the MultiApp base registry key.

If the value of the variable is not the name of a specific XML file, the value is assumed to be the name of the base registry key for the virtual application (i.e. the base registry key is assumed to be *.\Project54\applist\_value\*). In this case, the registry must contain a variable "GuiPath" in the

registry sub-key `.\Project54\applist_value\Parameters\` which contains the name of a specific XML file which describes the virtual application. Registry references embedded in the XML script are then resolved relative to the application specific base registry key `.\Project54\applist_value\`.

### ***.\Project54\MultiApp\Messaging***

Each variable in this registry key maps a logical name for an application into an actual messaging name (similar to most other Project54 applications). The only required logical name mappings are “self”, “Logger”, “Speechio” and “FirstApp”. Note that “self” refers to the actual MultiApp application and must indicate the messaging name for MultiApp as provided in the `.\Project54\AppManager\Applist` registry key. “Speechio” and “Logger” must indicate the messaging names of the applications which control speech input/out and error logging.

The “FirstApp” logical name must indicate the messaging name of the virtual application that should be brought to the top of the window stack when the MultiApp itself receives the “SHOW WINDOW” command. This generally should only occur if the registry key `.\Project54\AppManager\Messaging` has the “FirstApp” parameter set to the messaging name of the MultiApp application. This is the correct way to select a virtual application as the first Project54 application to be displayed on program start. Point the AppManager “FirstApp” registry parameter at MultiApp, and point the MultiApp “FirstApp” registry parameter at the virtual application. The AppManager “FirstApp” registry parameter can not be set directly to the messaging name of a virtual application since virtual application name aliases are not registered until after system startup is complete.

All other logical names must be as specified in the `<statusmessage>` and `<message>` elements of the XML scripts for any virtual applications that utilize the MultiApp base registry key..

### ***.\Project54\MultiApp\Parameters***

The “AppScreenPath” registry variable must be set to the base path for the XML files defining the virtual applications. All XML file specifications are considered to be relative to this base path unless the individual file specification contains a full path.

## APPENDIX I. Script Emulating the Project54 "PatrolScreen"

```
<screen id="Sample PatrolScreen">
<title>Project54: Patrol Information Screen</title>
<grammar>patrol_screen.txt</grammar>
<device x="0" y="0" id="PATROL SCREEN BASE">
<buttonset>
<button col="1" row="1" id="MAIN SCREEN"><state><command>MAIN
SCREEN</command><text>Main\nScreen</text></state></button>
<button col="2" row="1" id="EMERGENCY SIGNALS"><state><command>EMERGENCY SIGNALS</command><text>Emer-
gency\nSignals</text></state></button>
<button col="3" row="1" id="RECORDS"><state><command>RECORDS</command><text>Records</text></state></button>
<button col="1" row="2" id="RADAR"><state><command>RADAR</command><text>Radar</text></state></button>
<button col="2" row="2" id="RADIO CONTROLS"><state><command>RADIO
CONTROLS</command><text>Radio\nControls</text></state></button>
</buttonset>
<action>
<command>MAIN SCREEN</command>
<message><mdest>Appmanager</mdest><mtext>SHOW WINDOW</mtext></message>
</action>
<action>
<command>RECORDS</command>
<message><mdest>Records</mdest><mtext>SHOW WINDOW</mtext></message>
</action>
<action>
<command>RADAR</command>
<message><mdest>Radar</mdest><mtext>SHOW WINDOW</mtext></message>
</action>
<action>
<command>RADIO CONTROLS</command>
<message><mdest>Radio</mdest><mtext>SHOW WINDOW</mtext></message>
</action>
<action>
<command>EMERGENCY SIGNALS</command>
<message><mdest>Lights</mdest><mtext>SHOW WINDOW</mtext></message>
</action>
<label x="50" y="94"><text>Project54 Patrol Information
Screen</text><fontsize>1</fontsize><font>BOLDITALIC</font><just>cb</just></label>
</device>
<device x="0" y="0" id="STALKER RADAR">
<buttonset>
<button col="1" row="3" id="FRONT ANTENNA"><behavior>sticky</behavior>
```

```

<state><value>0</value><onoff>0</onoff><command>FRONT ANTENNA</command><text>Front\nAntenna</text></state>
<state><value>1</value><onoff>1</onoff><command>FRONT ANTENNA OFF</command></state>
<statusmessage><msrc>Radar</msrc><mtext>FRONT ANTENNA</mtext><value>1</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>FRONT ANTENNA OFF</mtext><value>0</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>REAR ANTENNA</mtext><value>0</value></statusmessage>
</button>

```

```

<button col="2" row="3" id="REAR ANTENNA"><behavior>sticky</behavior>
<state><value>0</value><onoff>0</onoff><command>REAR ANTENNA</command><text>Rear\nAntenna</text></state>
<state><value>1</value><onoff>1</onoff><command>REAR ANTENNA OFF</command></state>
<statusmessage><msrc>Radar</msrc><mtext>REAR ANTENNA</mtext><value>1</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>REAR ANTENNA OFF</mtext><value>0</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>FRONT ANTENNA</mtext><value>0</value></statusmessage>
</button>

```

```

</buttonset>

```

```

<textfield x="10" y="3" id="TARGET"><fontsize>3</fontsize><width>3</width>
<state><value>0</value><text>?</text></state>
<statusmessage><msrc>Radar</msrc><mtext>TARGET SPEED *</mtext><value>0</value></statusmessage>
<label x="9" y="14"><text>Target</text><fontsize>2</fontsize><font>BOLD</font><just>ct</just></label>
</textfield>

```

```

<textfield x="40" y="3" id="LOCK"><fontsize>3</fontsize><width>3</width>
<state><value>0</value><text>?</text></state>
<statusmessage><msrc>Radar</msrc><mtext>LOCK SPEED *</mtext><value>0</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>FASTEST SPEED *</mtext><value>0</value></statusmessage>
<label x="9" y="14"><text>Locked</text><fontsize>2</fontsize><font>BOLD</font><just>ct</just></label>
</textfield>

```

```

<textfield x="70" y="3" id="PATROL"><fontsize>3</fontsize><width>3</width>
<state><value>0</value><text>?</text></state>
<statusmessage><msrc>Radar</msrc><mtext>PATROL SPEED *</mtext><value>0</value></statusmessage>
<label x="9" y="14"><text>Patrol</text><fontsize>2</fontsize><font>BOLD</font><just>ct</just></label>
</textfield>

```

```

<lightset x="15" y="25" id="ANTENNAS">
<light x="0" y="0" ><text>F</text><textcolor>BLACK</textcolor><oncolor>GREEN</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="9" y="0" ><text>R</text><textcolor>BLACK</textcolor><oncolor>GREEN</oncolor><offcolor>DEFAULT</offcolor></light>
<state><value>00</value><onoff>00</onoff></state>
<state><value>10</value><onoff>10</onoff></state>
<state><value>01</value><onoff>01</onoff></state>
<statusmessage><msrc>Radar</msrc><mtext>FRONT ANTENNA SELECTED</mtext><value>10</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>REAR ANTENNA SELECTED</mtext><value>01</value></statusmessage>
<label x="-2" y="1"><text>Ant.</text><fontsize>1</fontsize><font>BOLD</font><just>rt</just></label>
</lightset>

```

```

<lightset x="45" y="25" id="RADAR MODES">
<light x="0" y="0"
><text>CL</text><textcolor>BLACK</textcolor><oncolor>GREEN</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="9" y="0"
><text>AW</text><textcolor>BLACK</textcolor><oncolor>GREEN</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="30" y="0"
><text>SA</text><textcolor>BLACK</textcolor><oncolor>GREEN</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="39" y="0"
><text>OP</text><textcolor>BLACK</textcolor><oncolor>GREEN</oncolor><offcolor>DEFAULT</offcolor></light>
<state><value>0000</value><onoff>0000</onoff></state>
<state><value>1100</value><onoff>1100</onoff></state>
<state><value>1000</value><onoff>1000</onoff></state>
<state><value>0100</value><onoff>0100</onoff></state>
<state><value>0011</value><onoff>0011</onoff></state>
<state><value>0010</value><onoff>0010</onoff></state>

```

```

<state><value>0001</value><onoff>0001</onoff></state>
<statusmessage><msrc>Radar</msrc><mtext>STATIONARY MODE</mtext><value>1100</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>STATIONARY CLOSING MODE</mtext><value>1000</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>STATIONARY AWAY MODE</mtext><value>0100</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>MOVING MODE</mtext><value>0011</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>MOVING SAME MODE</mtext><value>0010</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>MOVING OPPOSITE MODE</mtext><value>0001</value></statusmessage>
<label x="-2" y="1"><text>Stn.</text><fontsize>1</fontsize><font>BOLD</font><just>rt</just></label>
<label x="28" y="1"><text>Mov.</text><fontsize>1</fontsize><font>BOLD</font><just>rt</just></label>
</lightset>

```

```

<action>
<command>FRONT ANTENNA*</command>
<command>REAR ANTENNA*</command>
<message><mdest>Radar</mdest><mtext>*</mtext></message>
</action>

```

```

<action>
<command>P54 WINDOW SHOW</command>
<message><mdest>Radar</mdest><mtext>FEEDBACK ON</mtext></message>
</action>

```

```

<action>
<command>P54 WINDOW HIDE</command>
<message><mdest>Radar</mdest><mtext>FEEDBACK OFF</mtext></message>
</action>

```

```

</device>

```

```

<device x="0" y="37" id="ASTRO RADIO">

```

```

<buttonset>
<button col="3" row="2" id="SCAN"><behavior>sticky</behavior>
<state><value>0</value><onoff>0</onoff><command>SCAN</command><text>Scan</text></state>
<state><value>1</value><onoff>1</onoff><command>SCAN OFF</command></state>
<statusmessage><msrc>Radio</msrc><mtext>SCAN</mtext><value>1</value></statusmessage>
<statusmessage><msrc>Radio</msrc><mtext>SCAN OFF</mtext><value>0</value></statusmessage>
</button>

```

```

<button col="3" row="3" id="EXIT">
<state><value>0</value><onoff>0</onoff><command>P54 PROGRAM EXIT</command><text>Exit</text></state>
</button>
</buttonset>

```

```

<action>
<command>P54 TEST 1</command>
<message><mtext>STATUS TEST 1</mtext></message>
</action>

```

```

<action>
<command>P54 TEST 2</command>
<message><mtext>STATUS TEST 2</mtext></message>
</action>

```

```

<action>
<command>P54 TEST 3</command>
<message><mtext>STATUS TEST 3</mtext></message>
</action>

```

```

<action>
<command>P54 TEST 4</command>
<message><mtext>STATUS TEST 4</mtext></message>

```

```

</action>

<textfield x="10" y="0" id="CHANNEL">
<state><value>0</value><text?</text></state>
<fontsize>3</fontsize><width>9</width>
<statusmessage><msrc>Radio</msrc><mtext>CHANNEL *</mtext><value>0</value></statusmessage>
</textfield>

<lightset x="73" y="-1" id="XMIT">
<light x="0" y="0" ><text></text><textcolor>BLUE</textcolor><oncolor>RED</oncolor><offcolor>GRAY</offcolor></light>
<state><value>0</value><onoff>0</onoff></state>
<state><value>1</value><onoff>1</onoff></state>
<statusmessage><msrc>Radar</msrc><mtext>XMIT</mtext><value>1</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>XMIT OFF</mtext><value>0</value></statusmessage>
<label x="8" y="0"><text>Xmit</text><fontsize>2</fontsize><font>BOLD</font><just>lt</just></label>
</lightset>

<lightset x="73" y="7" id="BUSY">
<light x="0" y="0" ><text></text><textcolor>BLUE</textcolor><oncolor>YELLOW</oncolor><offcolor>GRAY</offcolor></light>
<state><value>0</value><onoff>0</onoff></state>
<state><value>1</value><onoff>1</onoff></state>
<statusmessage><msrc>Radar</msrc><mtext>BUSY</mtext><value>1</value></statusmessage>
<statusmessage><msrc>Radar</msrc><mtext>BUSY OFF</mtext><value>0</value></statusmessage>
<label x="8" y="0"><text>Busy</text><fontsize>2</fontsize><font>BOLD</font><just>lt</just></label>
</lightset>

<action>
<command>SCAN*</command>
<message><mdest>Radio</mdest><mtext>*</mtext></message>
</action>

<action>
<command>P54 WINDOW SHOW</command>
<message><mdest>Radio</mdest><mtext>FEEDBACK ON</mtext></message>
</action>

<action>
<command>P54 WINDOW HIDE</command>
<message><mdest>Radio</mdest><mtext>FEEDBACK OFF</mtext></message>
</action>

</device>

<device x="0" y="56" id="WHELEN SERIAL LIGHTS">

<buttonset>
<button col="3" row="4" id="REAR FLOODS"><behavior>sticky</behavior>
<state><value>0</value><onoff>0</onoff><command>REAR FLOODS</command><text>Rear\nFloods</text></state>
<state><value>1</value><onoff>1</onoff><command>REAR FLOODS OFF</command></state>
<statusmessage><msrc>Lights</msrc><mtext>REAR FLOODS</mtext><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtext>REAR FLOODS OFF</mtext><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtext>LIGHTS OFF</mtext><value>0</value></statusmessage>
</button>

<button col="1" row="6" id="LIGHTS AND SIREN"><behavior>sticky</behavior>
<state><value>0</value><onoff>0</onoff><command>LIGHTS AND SIREN</command><text>Lights\n+ Siren</text></state>
<state><value>1</value><onoff>1</onoff><command>LIGHTS AND SIREN OFF</command></state>
<statusmessage><msrc>Lights</msrc><mtext>LIGHTS AND SIREN</mtext><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtext>LIGHTS AND SIREN OFF</mtext><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtext>WAIL OFF</mtext><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtext>STROBES OFF</mtext><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtext>FRONT STROBES OFF</mtext><value>0</value></statusmessage>

```



```
<statusmessage><msrc>Lights</msrc><mtxt>YELP OFF</mtxt><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>SIREN OFF</mtxt><value>0</value></statusmessage>
</button>
```

```
<button col="3" row="6" id="AIR HORN">
<state><value>0</value><onoff>0</onoff><command>AIR HORN</command><text>Air\nHorn</text></state>
<state><value>1</value><onoff>1</onoff><command>AIR HORN OFF</command></state>
<statusmessage><msrc>Lights</msrc><mtxt>AIR HORN</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>AIR HORN OFF</mtxt><value>0</value></statusmessage>
</button>
</buttonset>
```

```
<textfield x="71" y="7" id="SIREN">
<fontsize>2</fontsize><width>6</width>
<state><value>0</value><text>?</text></state>
<statusmessage><msrc>Lights</msrc><mtxt>SIRENMODE*</mtxt><value>0</value></statusmessage>
<label x="10" y="-6"><text>Siren</text><fontsize>2</fontsize><font>BOLD</font><just>ct</just></label>
</textfield>
```

```
<lightset x="88" y="25" id="CONTROL HEAD">
<light x="0" y="0" ><text>CH</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>RED</offcolor></light>
<state><value>0</value><onoff>0</onoff></state>
<state><value>1</value><onoff>1</onoff></state>
<statusmessage><msrc>Lights</msrc><mtxt>LIGHTS CONTROL HEAD</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>LIGHTS CONTROL HEAD OFF</mtxt><value>0</value></statusmessage>
<label x="-2" y="3"><text>Cntrl\nHead</text><fontsize>1</fontsize><font>BOLDITALIC</font><just>rc</just></label>
</lightset>
```

```
<lightset x="10" y="0" id="WIG WAGS">
<light x="0" y="0"
><text>WW</text><textcolor>BLACK</textcolor><oncolor>WHITE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="48" y="0"
><text>WW</text><textcolor>BLACK</textcolor><oncolor>WHITE</oncolor><offcolor>DEFAULT</offcolor></light>
<state><value>0</value><onoff>00</onoff></state>
<state><value>1</value><onoff>10,10,01,01</onoff></state>
<statusmessage><msrc>Lights</msrc><mtxt>WIG WAGS</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>WIG WAGS OFF</mtxt><value>0</value></statusmessage>
</lightset>
```

```
<lightset x="30" y="0" id="TAKE DOWNS">
<light x="0" y="0"
><text>TD</text><textcolor>BLACK</textcolor><oncolor>WHITE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="8" y="0"
><text>TD</text><textcolor>BLACK</textcolor><oncolor>WHITE</oncolor><offcolor>DEFAULT</offcolor></light>
<state><value>0</value><onoff>00</onoff></state>
<state><value>1</value><onoff>11</onoff></state>
<statusmessage><msrc>Lights</msrc><mtxt>TAKE DOWNS</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>TAKE DOWNS OFF</mtxt><value>0</value></statusmessage>
</lightset>
```

```
<lightset x="30" y="25" id="REAR FLOODS">
<light x="0" y="0" ><text>RF</text><textcolor>BLACK</textcolor><oncolor>WHITE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="8" y="0" ><text>RF</text><textcolor>BLACK</textcolor><oncolor>WHITE</oncolor><offcolor>DEFAULT</offcolor></light>
<state><value>0</value><onoff>00</onoff></state>
<state><value>1</value><onoff>11</onoff></state>
<statusmessage><msrc>Lights</msrc><mtxt>REAR FLOODS</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>REAR FLOODS OFF</mtxt><value>0</value></statusmessage>
</lightset>
```

```
<lightset x="10" y="8" id="FRONT STROBES">
<light x="0" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="8" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
```

```

<light x="16" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="32" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="40" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="48" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<state><value>0</value><onoff>000000</onoff></state>
<state><value>1</value><onoff>001100,011110,110011,100001</onoff></state>
<statusmessage><msrc>Lights</msrc><mtxt>FRONT STROBES</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>STROBES</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>LIGHTS AND SIREN</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>FRONT STROBES OFF</mtxt><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>STROBES OFF</mtxt><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>LIGHTS OFF</mtxt><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>LIGHTS AND SIREN OFF</mtxt><value>0</value></statusmessage>
<label x="29" y="0"><text>F</text><fontsize>2</fontsize><font>BOLD</font><just>rt</just></label>
</lightset>

```

```

<lightset x="10" y="17" id="REAR STROBES">
<light x="0" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="8" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="16" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="32" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="40" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<light x="48" y="0" ><text>S</text><textcolor>WHITE</textcolor><oncolor>BLUE</oncolor><offcolor>DEFAULT</offcolor></light>
<state><value>0</value><onoff>000000</onoff></state>
<state><value>1</value><onoff>001100,011110,110011,100001</onoff></state>
<statusmessage><msrc>Lights</msrc><mtxt>REAR STROBES</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>STROBES</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>LIGHTS AND SIREN</mtxt><value>1</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>REAR STROBES OFF</mtxt><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>STROBES OFF</mtxt><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>LIGHTS OFF</mtxt><value>0</value></statusmessage>
<statusmessage><msrc>Lights</msrc><mtxt>LIGHTS AND SIREN OFF</mtxt><value>0</value></statusmessage>
<label x="29" y="0"><text>R</text><fontsize>2</fontsize><font>BOLD</font><just>rt</just></label>
</lightset>

```

```

<action>
<command>REAR FLOODS*</command>
<command>LIGHTS AND SIREN*</command>
<command>WIG WAGS*</command>
<command>TAKE DOWNS*</command>
<command>FRONT STROBES*</command>
<command>REAR STROBES*</command>
<command>STROBES*</command>
<command>WAIL*</command>
<command>AIR HORN*</command>
<command>LIGHTS OFF</command>
<command>SIREN OFF</command>
<message><mdest>Lights</mdest><mtxt>*</mtxt></message>
</action>

```

```

<action>
<command>P54 WINDOW SHOW</command>
<message><mdest>Lights</mdest><mtxt>FEEDBACK ON</mtxt></message>
</action>

```

```

<action>
<command>P54 WINDOW HIDE</command>
<message><mdest>Lights</mdest><mtxt>FEEDBACK OFF</mtxt></message>
</action>

```

```

<extra>
<command>LIGHTS OFF</command>

```

<command>SIREN OFF</command>

</extra>

</device>

</screen>