Overview

This document describes the profile of a Universal Fire Indicator (UFI) object (Figure 1). Use of the standard Node object is implied. Each UFI object can control one physical indicator device. Applications that require multiple device control from the same LONWORKS interface (node), can be accommodated by deploying multiple object instances (Figure 2).

![Functional profile](image1)

**Figure 1** Functional profile

![Multiple object instances](image2)

**Figure 2** Multiple object instances

Example Usage

The services provided by this profile are intended to facilitate the interaction with one or more of the following LONWORKS devices:

- Intelligent panel.
- Building management system.
**Background**

The UFI object encapsulates the functional requirements for specialized indicator devices such as simple display panels etc. In the diagrams below the LonWorks interface is physically hard wired to the indicator device.

![Diagram](image-url)

**Figure 3** Example 1 - Fire panel alarm indication

![Diagram](image-url)

**Figure 4** Example 2 - Display panel.
Node Object

The Node object can be used to provide additional alarm reporting, via the nvoAlarm network variable, in devices using the Fire Indicator object. The Node object is fully described in the LonMARK Application Layer guidelines. Details of the use of the nvoAlarm network variable in conjunction with the Fire Indicator object are provided below.

nvoAlarm

network output sync SNVT_alarm nvoAlarm;

The structure definition for SNVT_alarm is described in the SNVT Master List and Programmer’s Guide (005-0027-01) however further definition is provided below for its use for Indicator fire conditions.

(1) Zone Number (Node Location): Describes location of the device. 6 characters (ASCII-Numeric, Site/System Specific)

(2) The valid alarm_type_t enumerations are as follows:

<table>
<thead>
<tr>
<th>Enum #</th>
<th>Alarm_type Field</th>
<th>Notes*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>AL_NO_CONDITION</td>
<td>No alarm condition exists</td>
</tr>
<tr>
<td>13</td>
<td>AL_FIR_ALM</td>
<td>Alarm condition</td>
</tr>
<tr>
<td>15</td>
<td>AL_FIR_TRBL</td>
<td>Trouble (fault) condition with an object</td>
</tr>
<tr>
<td>16</td>
<td>AL_FIR_SUPV</td>
<td>Supervisory condition with an object (eg. sprinkler pressure)</td>
</tr>
<tr>
<td>17</td>
<td>AL_FIR_TEST_ALARM</td>
<td>Alarm condition with an object in Test Mode</td>
</tr>
<tr>
<td>21</td>
<td>AL_FIR_MAINT_ALERT</td>
<td>Maintenance alert condition for an input object</td>
</tr>
<tr>
<td>0xFF</td>
<td>AL_NUL</td>
<td></td>
</tr>
</tbody>
</table>

(3) The valid priority_level_t enumerations are as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
<th>Notes</th>
<th>BACnet Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNVT_alarm</td>
<td>priority_level</td>
<td>type file SNVT_PR.H</td>
<td></td>
</tr>
<tr>
<td>PR_3</td>
<td>Fire Supervisory</td>
<td>BACnet Priority</td>
<td>4</td>
</tr>
<tr>
<td>PR_10</td>
<td>Fire RTN’S (Display)</td>
<td>BACnet Priority</td>
<td>10</td>
</tr>
<tr>
<td>PR_NUL</td>
<td>priority null</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When Transmitted

It is transmitted when an alarm condition occurs and also upon receiving an RQ_UPDATE_ALARM request via the nviRequest network variable.

Valid Range

The valid range for the value field is any value within the defined limits of the SNVT_alarm output.

Default Service Type
Universal Fire Indicator Object

Figure 5 UFI object details
**Mandatory Network Variables**

**Universal Fire Indicator State**

network input SNVT_switch nviUIState;
The input network variable controls the indicator device.

**Valid Range**

<table>
<thead>
<tr>
<th>nviUIState</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0, 0</td>
<td>Indicator device deactivated</td>
</tr>
<tr>
<td>100, 1</td>
<td>Indicator device activated</td>
</tr>
</tbody>
</table>

**Default Value**

Indicator device deactivated.

---

**Optional Network Variables**

**Indicator Trouble**

network output SNVT_switch nvoFireTrouble;

This output network variable reflects the operational condition of the indicator device. A trouble condition can include any fault/trouble that can be detected by the device.

**Valid Range**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0, 0</td>
<td>Indicator device operational</td>
</tr>
<tr>
<td>100, 1</td>
<td>Indicator device is in trouble</td>
</tr>
</tbody>
</table>

**When Transmitted**

The variable is transmitted immediately, when the operational condition of the indicator device has changed significantly.

**Update Rate**

Not specified.

**Default Service Type**

The default service type is acknowledged.

---

**Configuration Properties**
**Indicator Type**

network input config SNVT_fire_indcte nciIndicator;
This configuration property describes the indicator device.

*Valid Range*
Defined by SNVT_fire_indcte.

*Default Value*
FN_UNIVERSAL.

*SCPT Reference*
SCPTfireIndicate(153)

---

**Location Label**

network input config SNVT_str_asc nciLocation;
This configuration property describes the physical location of the UFI object.

*Valid Range*
Defined by SNVT_str_asc.

*Default Value*
Not specified.

*SCPT Reference*
SCPTLocation(17)

---

**Receive Heartbeat**

network input config SNVT_time_sec nciMaxReceiveT;
This configuration property, defines the maximum period of time that should expire, before the indicator device is deactivated.

*Valid Range*
Defined by SNVT_time_sec.

*Default Value*
Disabled.

*SCPT Reference*
SCPTmaxSendTime(48)

---

**Zone Number**

network input config SNVT_count nciZoneNumber;
This configuration property contains the zone number for the indicator device.

*Valid Range*
Defined by SNVT_count.
**Default Value**
Not specified.

**SCPT Reference**
SCPTzoneNum(141)

---

**Fire Text Line 1**

```plaintext
network input config SNVT_str_asc nciFireText1;
```

This configuration property, contains text information, pertinent during a fire condition. If this string is delimited by the metasymbol `>`, nciFireText2 contains additional text information.

**Valid Range**
Defined by SNVT_str_asc.

**Default Value**
Not specified.

**SCPT Reference**
SCPTfireTxt1(149)

---

**Fire Text Line 2**

```plaintext
network input config SNVT_str_asc nciFireText2;
```

This configuration property, contains text information, pertinent during a fire condition. If this string is delimited by the metasymbol `>`, nciFireText3 contains additional text information.

**Valid Range**
Defined by SNVT_str_asc.

**Default Value**
Not specified.

**SCPT Reference**
SCPTfireTxt2(150)

---

**Fire Text Line 3**

```plaintext
network input config SNVT_str_asc nciFireText3;
```

This configuration property, contains text information, pertinent during a fire condition.

**Valid Range**
Defined by SNVT_str_asc.

**Default Value**
Not specified.

**SCPT Reference**
SCPTfireTxt3(151)
**Installation Date**

network input config SNVT_time_stamp nciInstallDate;
This configuration property contains the date of installation.

**Valid Range**
Defined by SNVT_time_stamp.

**Default Value**
Not specified.

**SCPT Reference**
SCPTinstallDate(146)

---

**Maintenance Date**

network input config SNVT_time_stamp nciMaintDate;
This configuration property contains the last maintenance date.

**Valid Range**
Defined by SNVT_time_stamp.

**Default Value**
Not specified.

**SCPT Reference**
SCPTmaintDate(147)

---

**Manufacture Date**

network input config SNVT_time_stamp nciManfDate;
This configuration property contains the date of manufacture. (Factory set and write access disabled).

**Valid Range**
Defined by SNVT_time_stamp.

**Default Value**
Not specified.

**SCPT Reference**
SCPTmanfDate(148)

---

**OEM Label**

network input config SNVT_str_asc nciOEMLabel;
This configuration property contains manufacture specific details. (Factory set and write access disabled).
**Valid Range**
Defined by SNVT_str_asc.

**Default Value**
Not specified.

**SCPT Reference**
SCPToemType(61)

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**Data Transfer**
Not supported.

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**Power-up State**
The configuration properties are adopted. The indicator device is deactivated and nvoAlarm is transmitted immediately.

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**Boundary and Error Conditions**
None specified.

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**Additional Considerations**
None specified.