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Elevator/Lift Fire-Systems Port : 140.41

# LONMARK® Functional Profile: *Vertical/Conveyer Transportation*

# Elevator/Lift Fire-Systems Port

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# Overview

This document describes the Functional Profile of an Elevator Fire Systems Object. Use of the standard Node object is implied. Each object controls the one elevator car group. Applications with more than one car group are accommodated by deploying multiple object instances (figure 2).

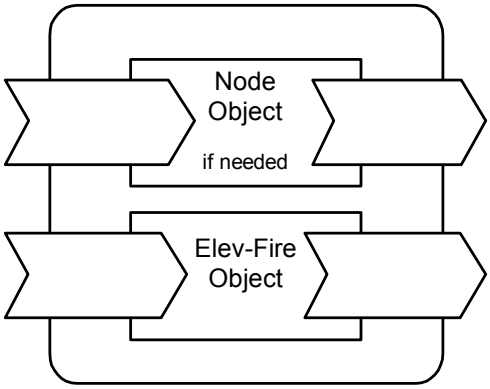


**Figure 1** Node Concept

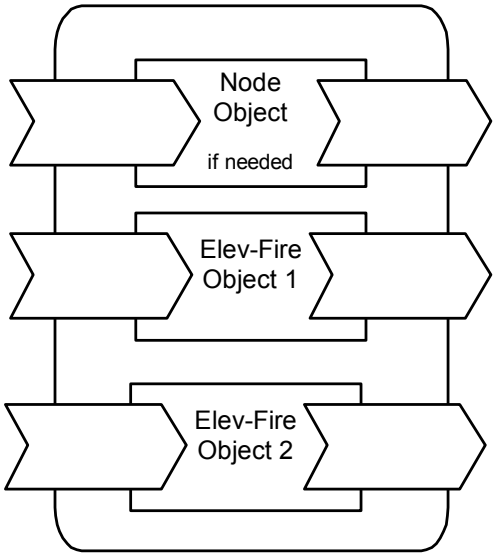


**Figure 2** Multiple Object Instances

# Example Usage

The services provided by this profile allow group(s) of elevator cars to accept fire signal information from fire control panels.

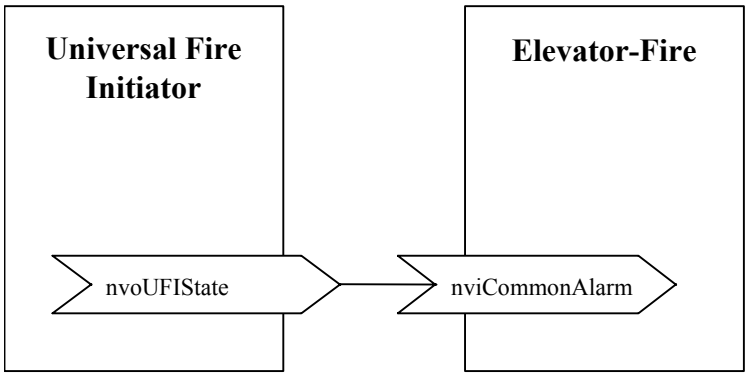


**Figure 2** Example Usage of the Object

# Object Details

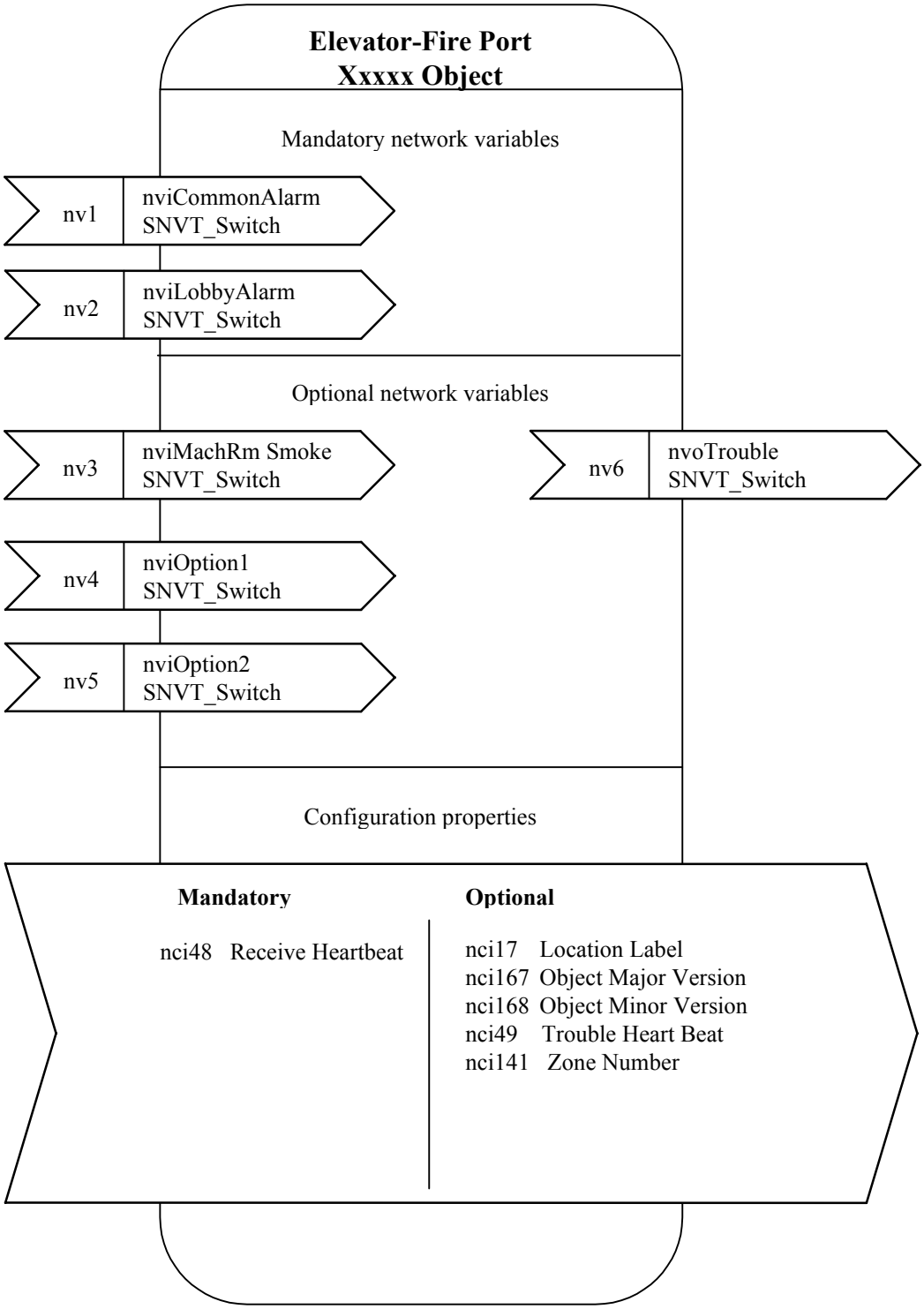


**Figure 3** Object Details

**Table 1** SNVT Details

| NV # (M/O)* | Variable Name | SNVT Name | SNVT Index | Description |
|---|---|---|---|---|
| 1 (M) | nviCommonAlarm | SNVT_Switch | 95 | Primary fire sensor input |
| 2 (M) | nviLobbyAlarm | SNVT_Switch | 95 | Fire in Lobby sensor |
| 3 (O) | nviMachRmSmoke | SNVT_Switch | 95 | Machine Room smoke sensor |
| 4 (O) | nviOption1 | SNVT_Switch | 95 | Whatever sensor you want |
| 5 (O) | nviOption2 | SNVT_Switch | 95 | Optional Sensor 2 |
| 6 (O) | nvoTrouble | SNVT_Switch | 95 | Elevator unable to respond to sensors |

* M = mandatory, O = optional

**Table 2** SCPT Details

| Man. Opt. * | SCPT Name NV Name Type or SNVT | SCPT Index | Associated NVs ** | Description |
|---|---|---|---|---|
| Man | SCPTmaxRcvTime nciReceiveHeartbeat SNVT_time_sec (107) | 48 | Entire Object | Ensure network connection |
| Opt | SCPTlocation nciLocation SNVT_str_asc (36) | 17 | Entire Object | Used to provide physical location of the node |
| Opt | SCPTobjMajVer nciObjMajVer unsigned short | 167 | Entire Object | Defines the major version number of the Object |
| Opt | SCPTobjMinVer nciObjMinVer unsigned short | 168 | Entire Object | Defines the minor version number of the Object |
| Opt | SCPTmaxSendTime nciTroubleHeartbeat SNVT_time_sec (107) | 49 | nvoTrouble | Maximum period of time that expires before the Object will automatically update nvoTrouble |
| Opt | SCPTzoneNum nciZoneNumber (141) | 141 | Entire Object | For use by Fire System |

* Man = mandatory, Opt = optional

** List of NVs to which this configuration property applies.

# Mandatory Network Variables

## nviCommonAlarm Input

```
network input sd_string("@p|1") SNVT_Switch
nviCommonAlarm;
```

This input network variable is the master fire signal to the elevator group controller.

### *Valid Range*

| Value | State | Action |
|---|---|---|
| ANY | 0 | Not Active |
| 0 | 1 | Not Active |
| >0 | 1 | Active |
| ANY | 0xFF | Undefined, No Action |

### *Default Value*

State = 0 Value=0.

### *Configuration Considerations*

None specified.

## nviLobbyAlarm Input

network input sd_string("@***p***|2") SNVT_Switch nviLobbyAlarm;

This input network variable is used to report fire in the lobby, so that alternate elevator action can be taken.

### *Valid Range*

| Value | State | Action |
|---|---|---|
| ANY | 0 | Not Active |
| 0 | 1 | Not Active |
| >0 | 1 | Active |
| ANY | 0xFF | Undefined, No Action |

### *Default Value*

State = 0 Value=0.

### *Configuration Considerations*

None specified.

# Optional Network Variables

## nvoTrouble Output

network output sd_string("@***p***|6") bind_info(ackd) SNVT_Switch nvoTrouble;

This output network variable is used to report to the fire system that the elevator controller cannot respond to the fire signals.

### *Valid Range*

| Value | State | Action |
|---|---|---|
| ANY | 0 | Not Active |
| 0 | 1 | Not Active |
| 200 | 1 | Active |
| ANY | 0xFF | Undefined, No Action |

### *Default Value*

State = 0 Value=0.

### *Configuration Considerations*

The transmission of this NV is regulated by the time specified in the nciTroubleHeartbeat CP, unless the nciTroubleHeartbeat CP has a value of 0.0, or other invalid value; in which case, the NV is not regulated by the nciTroubleHeartbeat value.

### *When Transmitted*

The output variable is transmitted:

- Upon node reset, after obtaining valid data.
- When the ‘state’ has changed.
- Regularly at the interval defined by the configuration variable nciTroubleHeartbeat.

### *Default Service Type*

The default service type is acknowledged.

## nviMachRmSmoke Input

network input sd_string("@***p***|3") SNVT_Switch nviMachRmSmoke;

This input network variable is used to indicate smoke or fire in the elevator machine room.

### *Valid Range*

| Value | State | Action |
|---|---|---|
| ANY | 0 | Not Active |
| 0 | 1 | Not Active |
| >0 | 1 | Active |
| ANY | 0xFF | Undefined, No Action |

### *Default Value*

State = 0 Value=0.

### *Configuration Considerations*

None specified.

## nviOption1 Input

network input sd_string("@***p***|4") SNVT_Switch nviOption1;

This input network variable is for whatever you want.

### *Valid Range*

| Value | State | Action |
|---|---|---|
| ANY | 0 | Not Active |
| 0 | 1 | Not Active |
| >0 | 1 | Active |
| ANY | 0xFF | Undefined, No Action |

### *Default Value*

State = 0 Value=0.

### *Configuration Considerations*

None specified.

## nviOption2 Input

network input sd_string("@***p***|5") SNVT_Switch nviOption2;

This input network variable is for whatever you want.

### *Valid Range*

| Value | State | Action |
|---|---|---|
| ANY | 0 | Not Active |
| 0 | 1 | Not Active |
| >0 | 1 | Active |
| ANY | 0xFF | Undefined, No Action |

### *Default Value*

State = 0 Value=0.

### *Configuration Considerations*

None specified.

# Configuration Properties

## Receive Heartbeat (Mandatory)

```
network input config sd_string("&1,p,0\x80,48")
SNVT_time_sec nciReceiveHeartbeat;
```

This input configuration property sets the maximum period of time that can expire before the Object needs to be automatically updated with any of the input network variables:

### *Valid Range*

The valid range is 1.0 to 3600.0 seconds.

Values outside this range are invalid and will disable the automatic update mechanism. A value of zero (0) will be used for the internal timer in cases where configured values are above 3600.0 seconds.

### *Default Value*

The default value is 0.0 (no automatic update).

### *Configuration Requirements/Restrictions*

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

### *SCPT Reference*

SCPTmaxSendTime (49)

---

## Location Label (Optional)

```
network input config sd_string("&1,p,0\x80,17")
SNVT_str_asc nciLocation;
```

This configuration property can be used to provide the location of the Object/node, where ***p*** is the Object index. The above code declaration is for providing the location of the Object. If it is preferred, the location of the node can be represented with the following code declaration:

```
network input config sd_string("&0,,0\x80,17")
SNVT_str_asc nciLocation;
```

### *Valid Range*

Any NULL-terminated ASCII string up to 31 bytes of total length (including NULL). The string must be truncated if the length does not allow the 31st character to be the NULL (0x00).

### *Default Value*

The default value is an ASCII string containing 31 NULLs (0x00).

### *Configuration Requirements/Restrictions*

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

### *SCPT Reference*

SCPTlocation (17)

---

## Object Major Version (Optional)

```
network input config sd_string("&1,p,0\x84,167")
unsigned short nciObjMajVer;
```

This configuration property can be used to provide the major version number of the Object when implemented on a device.

### *Valid Range*

Any integer number from 1 to 255. Only 1-byte of information is accepted.

### *Default Value*

The default value is one (1).

### *Configuration Requirements/Restrictions*

This CP is a constant (const_flg). It is not to be modified except that it is allowable to modify the value in a download of new code to the device.

### *SCPT Reference*

SCPTobjMajVer (167)

---

## Object Minor Version (Optional)

```
network input config sd_string("&1,p,0\x84,168")
unsigned short nciObjMinVer;
```

This configuration property can be used to provide the minor version number of the Object when implemented on a device.

### *Valid Range*

Any integer number from 0 to 255. Only 1-byte of information is accepted.

### *Default Value*

The default value is zero (0).

### *Configuration Requirements/Restrictions*

This CP is a constant (const_flg). It is not to be modified except that it is allowable to modify the value in a download of new code to the device.

### *SCPT Reference*

SCPTobjMinVer (168)

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## Trouble Heartbeat (Optional)

```
network input config sd_string("&1,p,0\x84,49")
SNVT_time_sec nciTroubleHeartbeat;
```

This configuration property can be used to indicate to the fire system the elevator group's capacity to respond.

### *Valid Range*

The valid range is 1.0 to 3600.0 seconds.

Values outside this range are invalid and will disable the automatic update mechanism. A value of zero (0) will be used for the internal timer in cases where configured values are above 3600.0 seconds.

### *Default Value*

The default value is 0.0 (no automatic update).

### *Configuration Requirements/Restrictions*

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

### *SCPT Reference*

SCPTmaxSendTime (49)

---

## Zone Number (Optional)

```
network input config sd_string("&1,p,0\x84,141")
unsigned short nciZoneNumber;
```

This configuration property contains the zone number for the indicator device.

### *Valid Range*

Defined by SNVT_count.

### *Default Value*

Not specified.

### *Configuration Requirements/Restrictions*

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

### *SCPT Reference*

SCPTzoneNum (141)

## Key for Unresolved References

***i.j.k*** are the indices of the CP-associated NVs in relation to their declaration order within the node, when implemented.

***p*** is this Object's index relative to the node sd_string declaration, when implemented.

## Data Transfer

None specified.

## Power-up State

There is no immediate network action on Power-up State.

## Boundary and Error Conditions

None specified.

## Additional Considerations

None specified.

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