



LONMARK[®] Functional Profile: Entry/Exit Device

SFPTentryExit

Overview

This document describes the Functional Profile of a LONMARK Entry/Exit function. Use of the standard Node Object is implied.

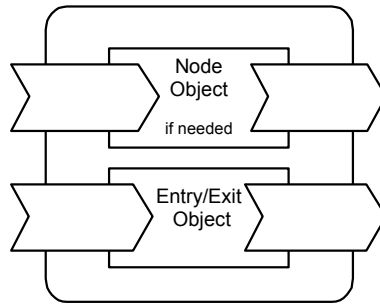


Figure 1 Entry/Exit node concept

An Entry/Exit device is a door, lock, sluice, turnstile, or something that allows and prohibits entry/exit of a physical unit in-to, or out-of, an area. It can also be a winch or any kind of mechanical equipment for which movement can be prevented by locking the Entry/Exit device, and thus enabled by unlocking the Entry/Exit device.

This kind of profile applies also to other devices in fields like Transportation, Elevators, etc.

An Entry/Exit device...

- can be locked or unlocked,
- can be opened or closed,
- may need service,
- may need to be stopped and thereafter started again, and
- may be requested to temporarily open, or open/close until the next close request arrives.

If the Entry/Exit device loses contact with the controlling device, and after reset, it must have a default behavior.

The mandatory network variables deal with the desired state of the Entry/Exit device (SNVT_ent_state) and the status of the Entry/Exit device (SNVT_ent_status).

There are optional network variables and configuration parameters that can be used to specify the Entry/Exit device's behavior when the mechanical equipment leaves and arrives to lockable position. There are also optional network variables that can be used for sending alarm messages under certain circumstances, e.g. "Device is/was forced to go to an open position."

Typically, a simple device like a turnstile will only support nviEntryState and nvoEntryStatus, and it will not support any of the modes supported in nviEntryOpmode. In this case, the "mode feedback" will be set to EM_UNDEFINED and unsupported states will respond with unknown_state.

Example Usage

The following example shows how the Entry/Exit Device functional block can interoperate with other devices or functional blocks in a security scenario.

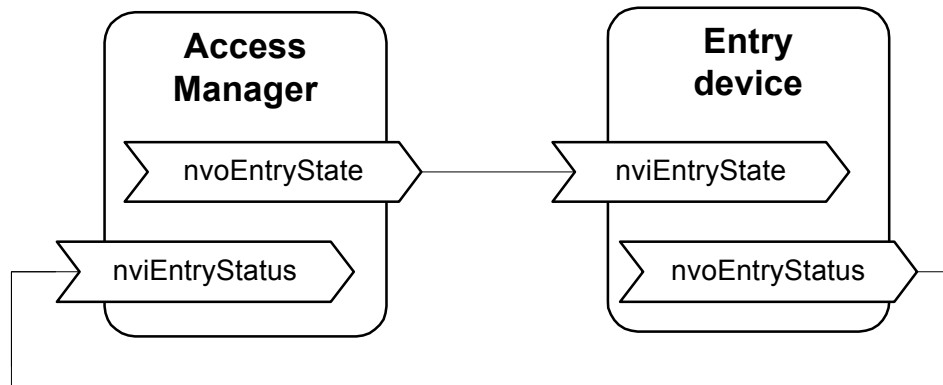


Figure 3 Example Usage of the Object.

The door is controlled by the nviEntryState, and it should respond in a unique way, depending on the mode selected in nviEntryOpMode. The Enumerated list for SNVT_ent_state is ent_cmd_t:

ES_NUL = -1	Invalid/unknown command.
ES_UNDEFINED = 0	State is not yet defined.
ES_OPEN_PULS = 1	Open the device and close the device when back in normal position if mode is not in EM_BLOCKED, EM_CLOSE_LOCK, or EM_NIGHT_LOCKING mode.
ES_OPEN = 2	Open the device if mode is not in EM_BLOCKED or EM_CLOSE_LOCK or EM_NIGHT_LOCKING mode.
ES_CLOSE = 3	Close the device if mode is not in EM_BLOCKED mode.
ES_STOP = 4	Stop the device from moving.
ES_STOP_RESUME = 5	Continue after ES_STOP or other “stop” command.
ES_ENTRY_REQ = 6	Opens device if in mode EM_AUTO, EM_AUTO_RED, EM_UNKNOWN or EM_OPEN_ONCE mode.
ES_EXIT_REQ = 7	Opens device if in mode EM_AUTO, EM_AUTO_RED, EM_UNKNOWN, EM_EXIT_ONLY, or EM_OPEN_ONCE mode.
ES_KEY_REQ = 8	Always opens the device, except in case of EM_BLOCKED and EM_MANUAL, where the device will only be unlocked.
ES_SAFETY_EXT_REQ = 9	External safety function is activated. This may cause the device to open, or to close and lock, depending on the configuration (like in case of burglary). If optional mode setting is not present on a device, this command is not supported.

ES_EMERGENCY_REQ = 10	External emergency function is activated. This may cause the device to open, or to close and unlock, depending on the configuration (like in case of fire). If optional mode setting is not present on a device, this command is not supported.
ES_UPDATE_STATE = 11	Updates the current state and mode on the output network variable nvoEntryStatus.
ES_SAF_EXT_RESUME = 12	Resume after “safety” functions.
ES_EMERG_RESUME = 13	Resume after “emergency” functions.

If the device does not support an optional mode, mode defaults to EM_UNDEFINED.

Object Details

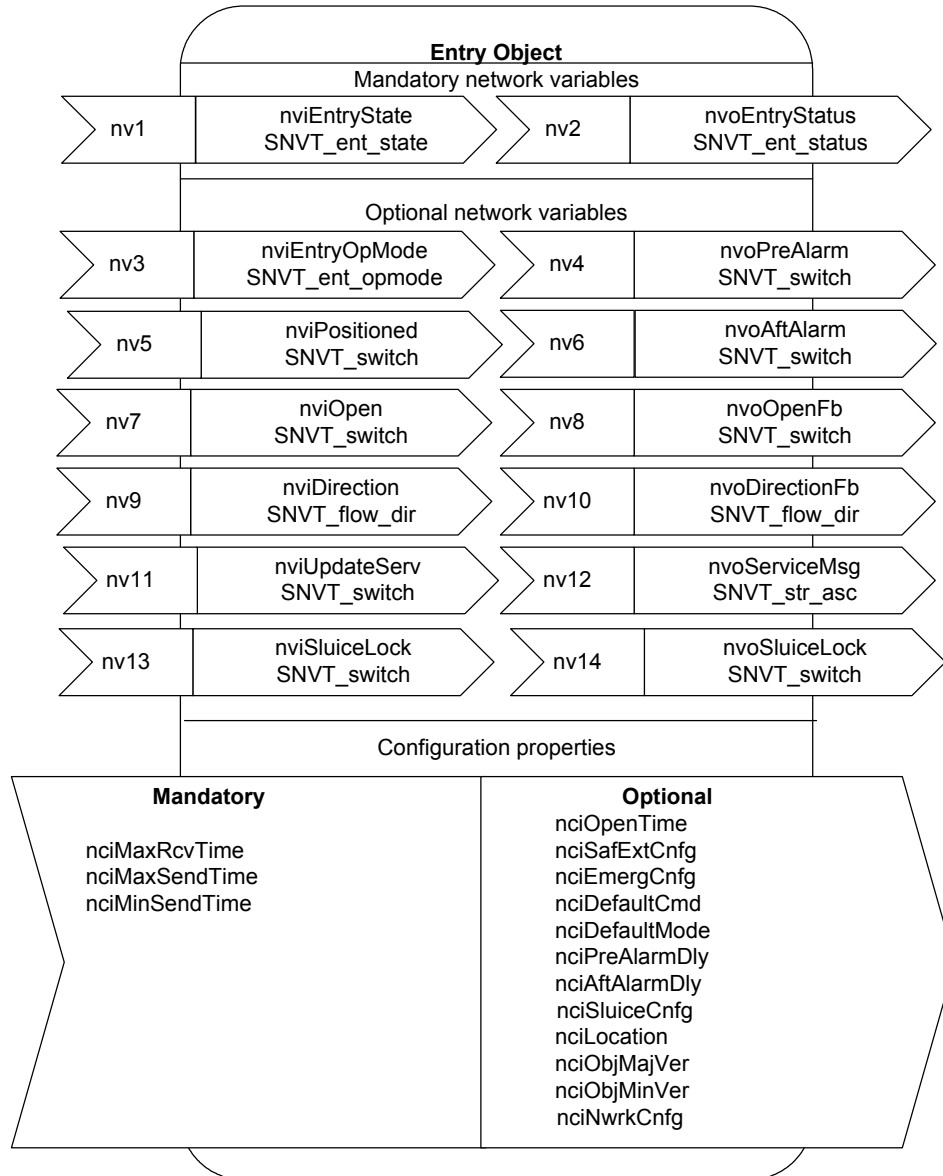


Figure 3 Object Details

Table 1 SNVT Details

NV # (M/O)*	Variable Name	SNVT Name	SNVT Index	Description
1 (M)	nviEntryState	SNVT_ent_state	69	Desired state of the Entry/Exit device (command)
2 (M)	nvoEntryStatus	SNVT_ent_status	70	Current entry/exit state and mode
3 (O)	nviEntryOpMode	SNVT_ent_opmode	168	Entry/Exit Operation mode
4 (O)	nvoPreAlarm	SNVT_switch	95	Pre warning alarm
5 (O)	nviPositioned	SNVT_switch	95	In lockable position
6 (O)	nvoAftAlarm	SNVT_switch	95	After warning alarm
7 (O)	nviOpen	SNVT_switch	95	Open the device
8 (O)	nvoOpenFb	SNVT_switch	95	Feed back of nviOpen
9 (O)	nviDirection	SNVT_flow_dir	171	Control the direction through the device
10 (O)	nvoDirectionFb	SNVT_flow_dir	171	Feed back of nviDirection
11 (O)	nviUpdateServ	SNVT_switch	95	Update the nvoServiceMsg
12 (O)	nvoServiceMsg	SNVT_str_asc	36	Current Service Message information
13(O)	nviSluiceLock	SNVT_switch	95	Sluice-Lock Token
14(O)	nvoSluiceLock	SNVT_switch	95	Sluice-Lock Token blocking

* M = mandatory, O = optional

Table 2 SCPT Details

Man. Opt. *	SCPT Name NV Name Type or SNVT	SCPT Index	Associated NVs **	Description
M	SCPTmaxRcvTime nciMaxRcvTime SNVT_time_sec (107)	48	nv1(M), nv3(M)	This configuration property is used to control the maximum time that elapses after the last update to bound network input before the Object takes a pre-defined state.
M	SCPTmaxSendTime nciMaxSendTime SNVT_time_sec (107)	49	nv2(M)	This configuration property is used to control maximum period of time that expires before the Object will automatically update NVs
M	SCPTminSendTime nciMinSendTime SNVT_time_sec (107)	52	nv2(M)	This configuration property is used to control minimum period of time that expires before the Object can update NVs with a new value
O	SCPTholdTime nciOpenTime SNVT_time_sec	91	Entire Object	This configuration property is used to control the time of the device's requested state, before it returns to its previous state (in pulse-like situations)
O	SCPTdefOutput nciDefaultCmd SNVT_ent_state	7	nv1(O)	This configuration property is used to control reset state of the device.
O	SCPTdefOutput nciDefaultMode SNVT_ent_opmode	7	nv2(O)	This configuration property is used to control reset mode of the device.

O	SCPTdelayTime nciPreAlarm SNVT_time_sec	96	nv4(O)	This configuration property is used to control the delay time before a pre alarm is sent out.
O	SCPTdelayTime nciAftAlarm SNVT_time_sec	96	nv6(O)	This configuration property is used to control the delay time before an alarm is sent out.
O	SCPTsluiceCnfg nciSluiceCnfg master_slave_t	259	Entire Object	Defines Master / Slave or none for sluice operation mode
O	SCPTsafExtCnfg nciSafExtCnfg SNVT_ent_opmode	257	nv3 (O)	This configuration property is used to define the door mode in case of ES_SAFETY_EXT_REQ.
O	SCPTemergCnfg nciEmergCnfg SNVT_ent_opmode	258	nv3 (O)	This configuration property is used to define the door mode in case of ES_EMERGENCY_REQ.
O	SCPTlocation nciLocation SNVT_str_asc	17	Entire Object	Used to provide physical location of the device
O	SCPTobjMajVer nciObjMajVer unsigned short	167	Entire Object	Defines the major version number of the Object
O	SCPTobjMinVer nciObjMinVer unsigned short	168	Entire Object	Defines the minor version number of the Object
O	SCPTnwrkCnfg nciNwrkCnfg SNVT_config_src	25	Entire Object	Network configuration source

* M = mandatory, O = optional

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

Mandatory Network Variables

Entry/Exit Command Input (Mandatory)

```
network input sd_string("@p|1") SNVT_ent_state  
bind_info(auth) nviEntryState;
```

This input network variable gives the desired state for the Entry/Exit device.

Valid Range

Valid range of SNVT_ent_state.

Default Value

The default value is the CP, **nciDefaultCmd**, if present, else some explicit data.

Configuration Considerations

This configuration property **nciMaxRcvTime** controls the maximum time that elapses after the last update to this network variable before the object adopts the default value.

Default Service Type

The default service type is acknowledged for general-purpose applications and authenticated for security applications.

Entry/Exit Status Output (Mandatory)

```
network output sd_string("@p|2") SNVT_ent_status  
bind_info(auth) nvoEntryStatus;
```

This output network variable holds the current Entry/Exit device status.

Valid Range

Valid range of SNVT_ent_status.

Default Value

The default value is Closed and with the mode EM_AUTO.

Configuration Considerations

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

When Transmitted

This variable is transmitting immediately when the Entry/Exit device state or mode changes.

The current value is regularly transmitted at the interval defined by the configuration variable **nciMaxSendTime**.

Default Service Type

The default service type is acknowledged for general-purpose applications and authenticated for security applications.

Optional Network Variables

Entry/Exit Operation Mode Input (Optional)

```
network input sd_string("@p|3") SNVT_ent_opmode  
bind_info(auth) nviEntryOpMode;
```

This input network variable is used to control the mode of the Entry/Exit device.

Valid Range

Valid range of SNVT_ent_opmode.

Default Value

The default value is the CP, **nciDefaultMode**.

Configuration Considerations

This configuration property **nciMaxRcvTime** controls the maximum time that elapses after the last update to this network variable before the object adopts the default value.

Default Service Type

The default service type is acknowledged for general-purpose applications and authenticated for security applications.

Pre-Alarm Output (Optional)

```
network output sd_string("@p|4") SNVT_switch  
nvoPreAlarm;
```

This output network variable is used for warning purposes. When the device has been unable to perform a requested command longer than the **nciPreAlarmDly**, but not as long as the **nciAftAlarmDly**, this variable sends State = 1 (TRUE) and Value > 0, otherwise State = 0 (FALSE) and Value = 0.

Valid Range

Values in the range of SNVT_switch below.

State = 0 (FALSE) and Value = 0; no pre-alarm condition

State = 1 (TRUE) and Value = 100.0%; pre-alarm condition

(State = 1 and any Value >0 from this output should be interpreted as “pre-alarm condition”)

Default Value

State = 0 (FALSE) and Value = 0; no pre-alarm condition

Configuration Considerations

None.

When Transmitted

When the device has been unable to perform a requested command for more than the **nciPreAlarmDly** time, State = 1 (TRUE) and Value > 0 is sent. State = 0 (FALSE) and Value = 0 is sent when the device has been unable to perform a requested command for more than the **nciAftAlarmDly** time.

Default Service Type

The default service type is acknowledged.

Positioned Input (Optional)

```
network input sd_string("@p|5") SNVT_switch  
bind_info(auth) nviPositioned;
```

This optional input network variable is used to inform the device whether the mechanical equipment being subject to locking is in lockable position or not. Typically, this can be an open or closed door.

Valid Range

Below values in the range of SNVT_switch.

State = 0 (FALSE) and Value = 0; mechanical equipment not in lockable position

State = 1 (TRUE) and Value > 0; mechanical equipment is in lockable position

Default Value

State = 1 (TRUE) and Value = 100.0%; mechanical equipment is in lockable position

Configuration Considerations

None.

Default Service Type

The default service type is authentication.

Aft Alarm Output (Optional)

```
network output sd_string("@p|6") SNVT_switch  
nvoAftAlarm;
```

This output network variable sends State = 1 (TRUE) and Value > 0 when the device has been unable to perform a requested command for more than the **nciAftAlarmDly** time. The alarm delay starts counting when the device tries to perform a requested action. If the device status changes without a preceding action request being received, the **nciPreAlarmDly** and **nciAftAlarmDly** is bypassed and a device alarm is sent immediately.

Valid Range

State = 0 (FALSE) and Value = 0; no alarm condition

State = 1 (TRUE) and Value = 100.0%; condition

(State = 1 and any Value >0 from this output should be interpreted as “alarm condition”)

Default Value

State = 0 (FALSE) and Value = 0; no alarm

Configuration Considerations

None.

When Transmitted

When the device has been unable to perform a requested command for more than the **nciPreAlarmDly**, State = 1 (TRUE) and Value > 0 is sent. State = 0 (FALSE) and Value = 0 is sent when an alarm condition is no longer present, i.e. the device has been able to perform the last requested action successfully. If the device status changes without a preceding action request being received, the **nciPreAlarmDly** and **nciAftAlarmDly** is bypassed and a device alarm is sent immediately.

Default Service Type

The default service type is acknowledged.

Open Command (Optional)

```
network input sd_string("@p|7") SNVT_switch  
bind_info(auth) nviOpen;
```

This optional input network variable is used to open and close the device from other devices using the general SNVT_switch network variable.

Valid Range

Below values in the range of SNVT_switch.

State = 0 (FALSE) and Value = 0; The device should close/lock

State = 1 (TRUE) and Value > 0; The device should open/unlock

In entries/exits that are designed for varying degrees of open/closed (sluices and other similar gates), the percentage represents a percentage of full open (*i.e.*, 100.0% is full open).

In two-state devices, “State = 1 and any Value >0” represents “full open.”

Default Value

State = 0 (FALSE) and Value = 0; The device should close/lock

Configuration Considerations

None.

Default Service Type

The default service type is acknowledged for general-purpose applications and authenticated for security applications.

Open Command Feedback (Optional)

```
network output sd_string("@p|8") SNVT_switch  
nvoOpenFb;
```

This output network variable is the feed back of the nviOpen network variable.

Valid Range

Values in the range of SNVT_switch below.

State = 0 (FALSE) and Value = 0; The device is closed/locked

State = 1 (TRUE) and Value > 0; The device is opened/unlocked

State and Value should represent the actual state of the door/gate.

Default Value

State = 0 (FALSE) and Value = 0; The device is closed/locked

Configuration Considerations

None.

When Transmitted

When the device has been able to perform a requested command on the **nviOpen** network variable.

Default Service Type

The default service type is acknowledged for general-purpose applications and authenticated for security applications.

Direction Command (Optional)

```
network input sd_string("@p|9") SNVT_flow_dir  
bind_info(auth) nviDirection;
```

This optional input network variable is used to define in which direction an access is permitted.

Valid Range

Below values in the range of SNVT_flow_dir.

FD_NONE (0)	no movement allowed
FD_OUT (1)	exit-direction only
FD_IN (2)	entry-direction only
FD_ANY (3)	no restrictions from movement

Default Value

Default value is FD_ANY.

Configuration Considerations

None.

Default Service Type

The default service type is authentication.

Direction Command Feedback (Optional)

```
network output sd_string("@p|10") SNVT_flow_dir  
nvoDirectionFb;
```

This output network variable is the feedback of the nviDirection network variable.

Valid Range

Below values in the range of SNVT_flow_dir.

FD_NUL (-1)	invalid value (unable to perform)
FD_NONE (0)	no movement allowed
FD_OUT (1)	exit-direction only
FD_IN (2)	entry-direction only
FD_ANY (3)	no restrictions from movement

Default Value

Default value is FD_ANY. FD_ANY might not be supported by the passageway (such as in the case of a unidirectional turnstile), but this value should not report FD_NUL if the passageway can accommodate one of FD_OUT or FD_IN. If the passageway knows its limitations, then it can report the FD_OUT or FD_IN upon receiving an FD_ANY from nviDirection; however, if it does not know its limitations, then it can report FD_ANY.

Configuration Considerations

None.

When Transmitted

When the device has been able to perform a requested command on the nviDirect network variable.

Default Service Type

The default service type is acknowledged.

Update Service-Message Command (Optional)

```
network input sd_string("@p|11") SNVT_switch  
nviUpdateServ;
```

This optional input network variable is used to request an update of an optional service-message output.

Valid Range

Below values in the range of SNVT_switch.

State = 0 (FALSE) and Value = 0; No update requested.

State = 1 (TRUE) and Value > 0; Update requested.

Default Value

State = 0 (FALSE) and Value = 0; No update requested.

Configuration Considerations

None.

Default Service Type

The default service type is acknowledged.

Service-Message Output (Optional)

```
network output sd_string("@p|12") SNVT_str_asc  
nvoServiceMsg;
```

This output network variable updates with the latest service message if a request comes from the **nviUpdateServ** network variable.

The service message is a means to have instructions for maintenance action available as a short message.

Its definition, configuration, and use are completely left open to the manufacturer.

Valid Range

Values in the range of SNVT_str_asc.

Default Value

Text = "NO SERVICE MESSAGE PENDING". This message can be translated as required by law or necessity.

Configuration Considerations

None.

When Transmitted

When the device has received a request from the **nviUpdateServ** network variable.

Default Service Type

The default service type is acknowledged.

Sluice-Lock Token (optional)

```
network input sd_string("@p|13") SNVT_switch
bind_info(auth) nviSluiceLock;
```

The Sluice-Lock Token is used for an airlock or water-canal locking system where there is a set of two more doors/gates (often by way of a sluice) that ensure that only one door/gate can be opened at a given time. In this application case, a door/gate is only allowed to open if it owns the Token, or if nciSluiceCnfg is set to MSC_UNKNOWN (0).

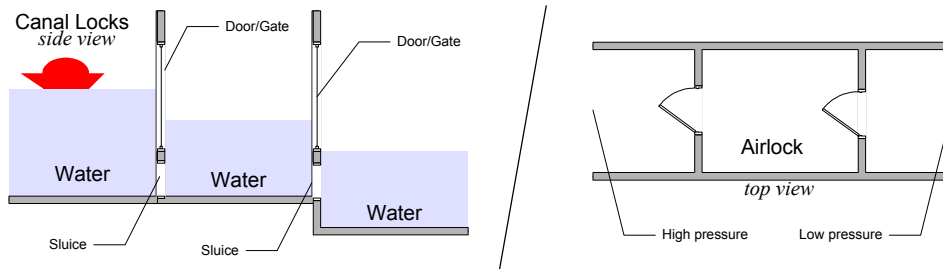
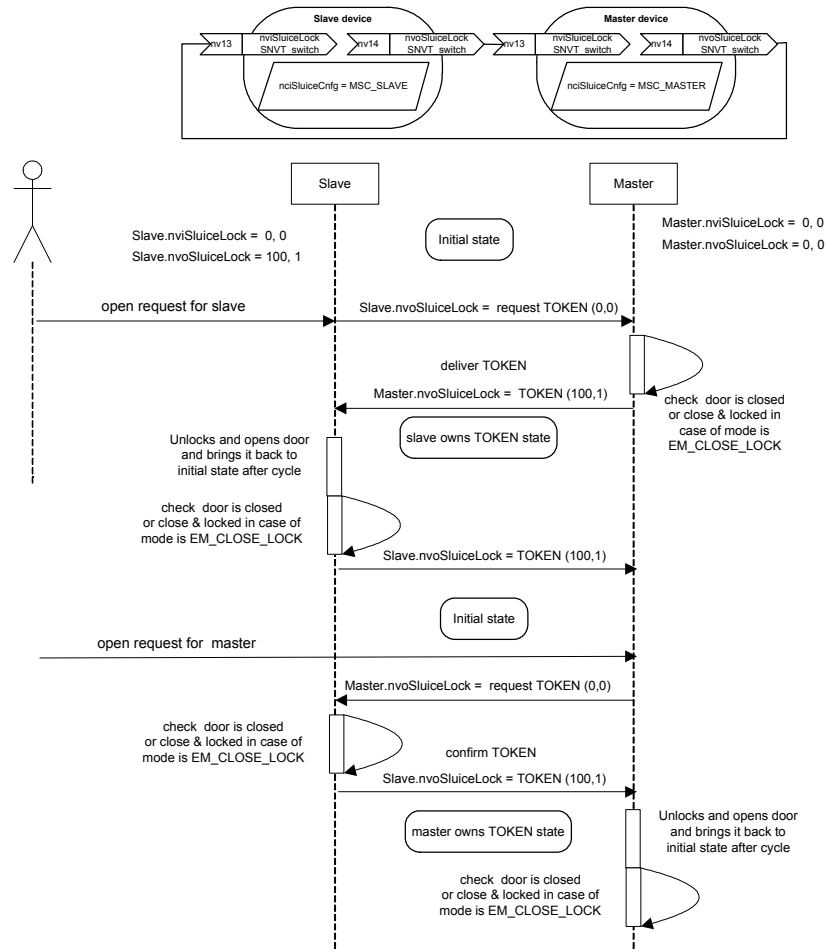


Figure 4 Sluice-Lock Operation

This optional input network variable is used to check a Token output of a neighbor device or a sluice manager:

Master operation: the slave requests a TOKEN and gets the TOKEN on nvoSluiceLock. If the master is in a state to disable opening requests, nvoSluiceLock is set to TOKEN available.

Slave Operation: if nviSluiceLock is set, an opening cycle is allowed to occur

In case of a timing conflict in having both units requesting the TOKEN, the master units always wins. The slave's request TOKEN procedure must give TOKEN to the master in this case. A master must give the TOKEN to the slave once its own opening cycle ends.

Valid Range

Below values in the range of SNVT_switch.

State = 0 (FALSE) and Value = 0;

TOKEN requested (master), no TOKEN made available (slave)

State = 1 (TRUE) and Value > 0;

TOKEN released (master), TOKEN made available (slave)

Default Value

State = 0 (FALSE) and Value = 0; No TOKEN requested / available.

Configuration Considerations

SCPTsluiceCnfg nciSluiceCnfg defines Master / Slave or none for operation mode

Default Service Type

The default service type is acknowledged for general-purpose applications and authenticated for security applications.

Sluice-Lock Token (optional)

```
network output sd_string("@p|14") SNVT_switch  
bind_info(auth) nvoSluiceLock;
```

This optional input network variable is used to give Token output. Check figure 4 and related description for further information on sluice-lock operation.

Master operation: the slave requests a TOKEN and gets the TOKEN on nvoSluiceLock. If the master is in a state to disable opening requests, nvoSluiceLock is set to TOKEN available.

Slave Operation: nvoSluiceLock is set to TOKEN if a cycle is completed

Valid Range

Below values in the range of SNVT_switch.

State = 0 (FALSE) and Value = 0;

 TOKEN requested (slave), no TOKEN made available (master)

State = 1 (TRUE) and Value > 0;

 no TOKEN requested (slave), TOKEN made available (master)

Default Value

State = 0 (FALSE) and Value = 0; No TOKEN requested / available.

Configuration Considerations

SCPTsluiceCnfg nciSluiceCnfg defines Master / Slave or none for operation mode

Default Service Type

The default service type is acknowledged for general-purpose applications and authenticated for security applications.

Configuration Properties

Receive Heartbeat (Mandatory)

```
network input config sd_string("&2,i,0\x80,48")
SNVT_time_sec nciMaxRcvTime;
```

or the following may be substituted, if the same value is used for both NVs:

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

This configuration property is used to control the maximum time that elapses after the last update to a bound network input before the object adopts a default value for the following :

nv1 – nviEntryState (Mandatory for nv1)

nv3 – nviEntryOpMode (Mandatory for nv3, if nv3 is implemented)

If desired, more than one Receive Heartbeat can be used (if desired to have a separate value for each NV).

Valid Range

The valid range is 1.0 to 3600.0 seconds.

Values outside this range are invalid and they will disable the automatic default value 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 default value).

Configuration Requirements/Restrictions

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

SCPT Reference

SCPTmaxRcvTime (48)

Send Heartbeat Maximum (Mandatory)

```
network input config sd_string("&2, i, 0\x80, 49")
SNVT_time_sec nciMaxSendTime;
```

This input configuration property sets the maximum period of time that can expire before the Object will automatically update the following network variables:

nv2 – nvoEntryStatus (Mandatory for nv2)

Valid Range

The valid range is 1.0 to 3600.0 seconds.

Values outside this range are invalid and they 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)

Send Heartbeat Minimum (Mandatory)

```
network input config sd_string("&2, i, 0\x80, 52")
SNVT_time_sec nciMinSendTime;
```

This input configuration property sets the minimum period of time that must expire before the Object can update the following network variables with a new value:

nv2 – nvoEntryStatus (Mandatory for nv2)

Valid Range

The valid range is 1.0 to 3600.0 seconds.

Values outside this range are invalid and they 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

SCPTminSendTime (52)

Open Time (Optional)

```
network input config sd_string("&1, P, 0\x80, 91")
SNVT_time_sec nciOpenTime;
```

This configuration property is used to control the time the device should be open/unlocked in pulse situations.

Valid Range

The valid range is 1.0 to 3600.0 seconds.

Values outside this range are invalid and they will disable the automatic default value 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 default value).

Configuration Requirements/Restrictions

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

SCPT Reference

SCPTholdTime (91)

Safety External Mode (optional)

```
network input config sd_string("&2, i, 0\x80, 257")
SNVT_ent_opmode nciSafExtCnfg;
```

This configuration property is used to control mode the door goes to after getting an ES_SAFETY_EXT_REQ input.

nv3 – nviEntryOpMode (Optional for nv3)

Valid Range

EM_UNDEFINED (0), EM_CLOSE_LOCK (3), EM_CLOSE_UNLOCK (4), EM_OPEN (6), and EM_MANUAL (8).

Default Value

EM_CLOSE_LOCK (3).

Configuration Requirements/Restrictions

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

SCPT Reference

SCPTsafExtCnfg (257)

Emergency Mode (optional)

```
network input config sd_string("&2, i, 0\x80, 258")
SNVT_ent_opmode nciEmergCnfg;
```

This configuration property is used to control mode the door goes to after getting an ES_EMERGENCY_REQ input.

nv3 – nviEntryOpMode (Optional for nv3)

Valid Range

EM_UNDEFINED (0), EM_CLOSE_LOCK (3), EM_CLOSE_UNLOCK (4), EM_OPEN (6), and EM_MANUAL (8).

Default Value

EM_CLOSE_UNLOCK (4).

Configuration Requirements/Restrictions

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

SCPT Reference

SCPTemergCnfg (258)

Default Command (Optional)

```
network input config sd_string("&2, i, 0\x80, 7")
SNVT_ent_state nciDefaultCmd;
```

When network communication fails and at reset, the Device needs to have default behavior.

nv1 – nviEntryState (Optional for nv1)

Valid Range

Values in the range of SNVT_ent_state.

Default Value

Application specific.

Configuration Requirements/Restrictions

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

SCPT Reference

SCPTdefOutput (7)

Default Mode (Optional)

```
network input config sd_string("&2, i, 0\x80, 7")
SNVT_ent_opmode nciDefaultMode;
```

When network communication fails and at reset, the Device needs to have default mode.

nv2 – nvoEntryStatus (Optional for nv2)

Valid Range

Values in the range of SNVT_ent_opmode.

Default Value

Application specific.

Configuration Requirements/Restrictions

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

SCPT Reference

SCPTdefOutput (7)

Pre-Alarm Delay (Optional)

```
network input config sd_string("&2, i, 0\x80, 96")
SNVT_time_sec nciPreAlarmDly;
```

This delay determines the time until a pre alarm is activated. The time starts counting when a device action command is received, and is reset when the received command is performed successfully. If the requested command could not be performed within the time specified by **nciPreAlarmDly**, a pre-alarm is sent out via **nvoPreAlarm**.

nv4 – nvoPreAlarm (Optional for nv4)

Valid Range

The valid range is 1.0 to 3600.0 seconds.

Values outside this range are invalid and will disable the pre-alarm.

Default Value

0 (zero)

Configuration Requirements/Restrictions

This CP must be shorter than **nciAftAlarmDly**.

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

SCPT Reference

SCPTdelayTime (96)

Aft-Alarm Delay (Optional)

```
network input config sd_string("&2, i, 0\x80, 96")
SNVT_time_sec nciAftAlarmDly;
```

This delay determines the time until a device alarm is activated. The time starts counting when a device action command is received, and counter is reset when the received command is performed successfully. If the requested command could not be performed within the time specified by **nciAftAlarmDly**, a Device alarm is sent out via **nvoAftAlarm**.

nv6 – nvoAftAlarm (Optional for nv6)

Valid Range

The valid range is 1.0 to 3600.0 seconds.

Values outside this range are invalid and will disable the Device alarm.

Default Value

0 (zero)

Configuration Requirements/Restrictions

This CP must be longer than **nciPreAlarmDly**.

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

SCPT Reference

SCPTdelayTime (96)

Sluice Configuration (optional)

```
network input config sd_string("&1, P, 0\x88, 259")
master_slave_t nciSluiceCnfg;
```

Defines the sluice-lock operation mode. It is used for an airlock or water-canal locking system where there is a set of two more doors/gates (often by way of a sluice) that ensure that only one door/gate can be opened at a given time. In this application case, a door/gate is only allowed to open if it owns the Token. Check figure 4 and related description for further information on sluice-lock operation.

Valid Range

The valid range:	MSC_NUL (0xFF; -1)	no Sluice-lock function
	MSC_UNKNOWN (0)	no sluice-lock
	MSC_SLAVE (1)	Starts on requesting Token: the door acts as Token slave releasing the Token after operation
	MSC_MASTER (2)	Starts on owning Token: the door acts as Token master keeping the Token after operation

Default Value

Default value is MSC_NUL.

Configuration Requirements/Restrictions

none

SCPT Reference

SCPTsluiceCnfg (259)

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 one 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, 0xA4, 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 1 to 255. Only one byte of information is accepted.

Default Value

The default value is zero (0).

Configuration Requirements/Restrictions

This CP is device specific (device_specific). 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)

Network Configuration Source (Optional)

```
network input config sd_string("&1, P, 0\x88, 25")
SNVT_config_src nciNwrkConfig;
```

All nodes that support self-installation must provide this CP to allow a network tool to also install the node.

Valid Range

The valid range defined for SNVT_config_src.

Default Value

For a self-installed node the default value is CFG_LOCAL.

Configuration Requirements/Restrictions

This CP as a “reset after modifying” modification flag (reset_flg).

SCPT Reference

SCPTnwrkCnfg (25)

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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