Functional Profile: Identifier Sensor

SFPTIdentifierSensor
Overview

This document describes the Functional Profile of a LonMark Identifier Sensor Object.

A LonMark Identifier Sensor can be associated with a magnetic card reader (magcard). However, the Identifier Sensor can be any kind of device used to identify a person who wants to access a controlled point/area. Therefore, the Identifier Sensor can also be an infrared or a proximity card reader; or a biometric identifier device, etc.

The internal technology is not relevant for interoperability purposes with other nodes. The existing SNVT_magcard format is used (ISO 7811 standard for card stripes). Note that there exist a large number of technologies used for identification cards and other devices. Sometimes the technologies use standard protocols—sometimes proprietary. That is why it is not possible to propose thousands of SNVTs for identification purposes. For the interoperability with other systems in the building, the basic technology used is not relevant, and depends on each manufacturer.

Therefore, the SNVT_magcard in this profile can represent an image of the true internal code of the badge; the advantage is that the SNVT exists already. A conversion-algorithm for other kinds of internal IDs of badges (infrared code bar, Wiegand, chip cards, index in a table, etc) should be used by each manufacturer as needed.

Use of the standard Node object is implied.
Example Usage

Here is an example of how the Identifier Sensor Profile would be used in a system of other nodes/Objects.

![Diagram](image.png)

**Figure 2** Example Usage of the Object
Object Details

Identifier Sensor Object

Mandatory network variables

nv1
nvold
SNVT_magcard

Optional network variables

Configuration properties

Mandatory
nci49  Send Heartbeat

Optional
nci17  Location Label
nci167 Object Major Version
nci168 Object Minor Version
nci25  Network Configuration Source

Figure 3  Object Details
### Table 1 SNVT Details

<table>
<thead>
<tr>
<th>NV # (M/O)*</th>
<th>Variable Name</th>
<th>SNVT Name</th>
<th>SNVT Index</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (M)</td>
<td>nvId</td>
<td>SNVT_magcard</td>
<td>86</td>
<td>Identifier</td>
</tr>
</tbody>
</table>

* M = mandatory, O = optional

### Table 2 SCPT Details

<table>
<thead>
<tr>
<th>Man. Opt. *</th>
<th>SCPT Name NV Name Type or SNVT</th>
<th>SCPT Index</th>
<th>Associated NVs **</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man</td>
<td>SCPTmaxSendTime nciMaxSendTime SNVT_time_sec (107)</td>
<td>49</td>
<td>nv1 (M)</td>
<td>Maximum period of time that expires before the Object will automatically update NVs</td>
</tr>
<tr>
<td>Opt</td>
<td>SCPTlocation nciLocation SNVT_str_asc (36)</td>
<td>17</td>
<td>Entire Object</td>
<td>Used to provide physical location of the node</td>
</tr>
<tr>
<td>Opt</td>
<td>SCPTobjMajVer nciObjMajVer unsigned short</td>
<td>167</td>
<td>Entire Object</td>
<td>Defines the major version number of the Object</td>
</tr>
<tr>
<td>Opt</td>
<td>SCPTobjMinVer nciObjMinVer unsigned short</td>
<td>168</td>
<td>Entire Object</td>
<td>Defines the minor version number of the Object</td>
</tr>
<tr>
<td>Opt</td>
<td>SCPTnwrkCnf nciNetworkConfig SNVT_config_src (69)</td>
<td>25</td>
<td>Entire Object</td>
<td>Defines the Configuration Source of the node</td>
</tr>
</tbody>
</table>

  It should be Mandatory for CPs that are Mandatory for an NV that is also Mandatory. This is also valuable for CPs that apply to the Entire Object.

** List of NVs to which this configuration property applies.
  An “(M)” means that the CP is Mandatory if the NV (to which it applies) is implemented. An “(O)” means that the CP is Optional if the NV (to which it applies) is implemented.
Mandatory Network Variables

Some Input

network output sd_string("@p|1")
bind_info(ackd) SNVT_magcard nvoId;

This network variable transmits the identifier number to an external node (for example: an Access Manager Node).

Valid Range

SNVT_magcard

Default Value

The default value is 0 (no identifier). This value will be adopted at power-up and if no identification device has been detected.

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

The variable is transmitted immediately when a new Identifier number is acquired.

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

Default Service Type

The default service type is acknowledged.
Configuration Properties

Send Heartbeat (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:
nv1 – nvoId (Mandatory)
i is the index of the NV in relation to its declaration order within the node, when implemented.

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)**

```c
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:

```c
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)

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**Object Major Version (Optional)**

```c
network input config sd_string("&1,P,0\x80,167")
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 256. 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)

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**Object Minor Version (Optional)**

```c
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 256. 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)
Network Configuration Source (Optional)

network input config sd_string("$1,p,0\x88,25")
SNVT_config_src nciNetworkConfig;

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

Valid Range
SNVT_config_src

Default Value
For a self-installed node, the default value must be CFG_LOCAL.

Configuration Requirements/Restrictions
This CP must have a “reset after modifying” flag (reset_flg).

SCPT Reference
SCPTnwrkCnfg (25)
Key for Unresolved References

\[ i \text{ is the index of the NV in relation to its declaration order within the node, when implemented.} \]

\[ p \text{ is this Object’s index relative to the node sd_string declaration, when implemented.} \]

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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