

Version2.02 2001.02.06

AIR CONDITIONER INTERFACE

MODEL: LMAP02-E  
PAC-YV02LMAP

Network Variables Specification

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AppendixA: Communication timing when power supply of LM-AP is turned on.

ProgramID: 9-00071-0076-0002-02  
XIF: Im02\_02.xif  
stencil for LonMaker: lmap0202.vss

	Version2.02								
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\*2.This product is not LONMARK product.

\*3.Please contact the dealer about obtaining XIF and stencil.

 **MITSUBISHI ELECTRIC**  
MITSUBISHI ELECTRIC CORPORATION  
AIR-CONDITIONING & REFRIGERATION SYSTEMS WORKS

## 1. Specification

### 1-1. Object Model

LMAP can be connected with the following models made by MITSUBISHI ELECTRIC CORPORATION.

<Model name>

1. Multiple split type air conditioners CITY MULTI
2. Split-type air conditioners Mr.SLIM  
NOTE:Mr.SLIM is necessary for A-M Converter(PAC-SF48MA-E)
3. Heat recovery ventilators LOSSNAY  
NOTE:LOSSNAY is necessary for LOSSNAY Adapter(PZ-53ADF-E/PZ-52SF-E)

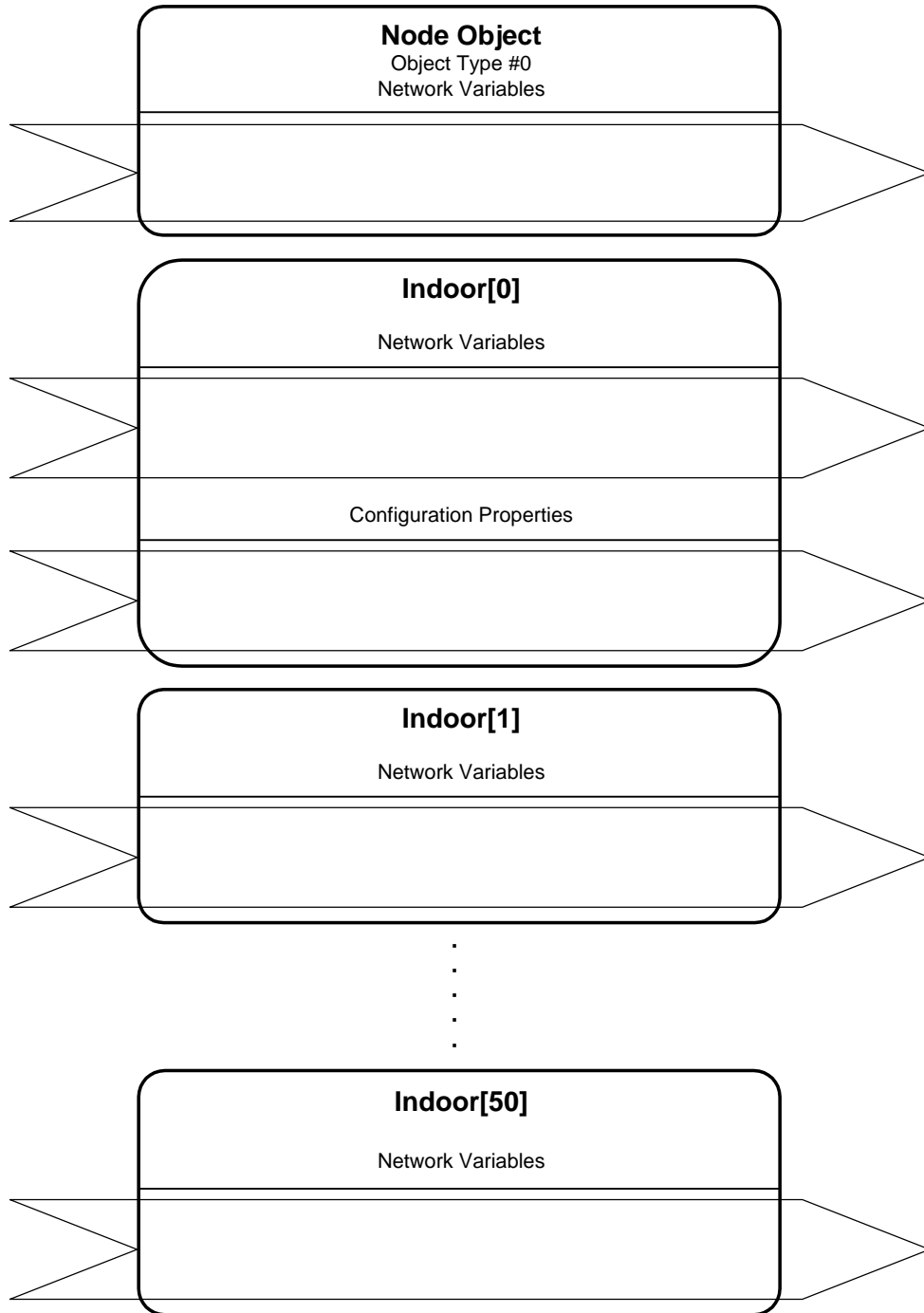
### 1-2. Explanation of Function Setting

The function set switch is necessary for this product because of connected model and the control function from LONWORKS.

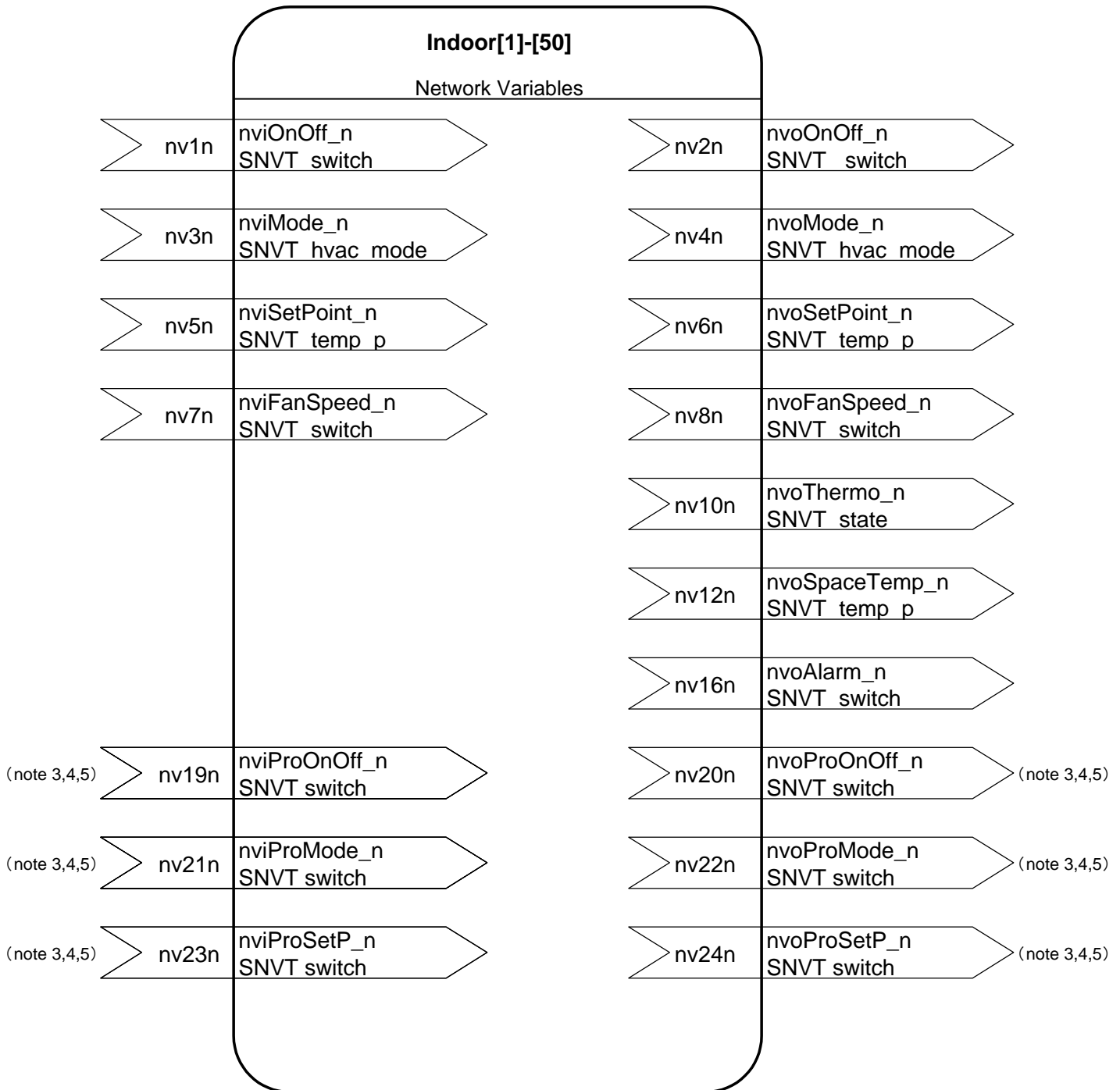
SW NO.	switch name	Function	Note	Factory setting	Set timing	
SW1-1	Function switch of local prohibit	ON	local prohibit effective	Operation local prohibit nv input from LONWORKS becomes Effective when switch ON.	OFF	Before turning on the power supply
		OFF	local prohibit invalidity	Operation local prohibit nv input from LONWORKS becomes invalid when switch OFF.		
SW1-2	Used together with MELANS switch	ON	used together with MELNAS		OFF	Before turning on the power supply
		OFF	not used together with MELNAS			
SW1-3	Indoor temperature state interval switch	ON	Transmission interval (1minutes or more)	*The number of indoor unit should be connected 30 or less	OFF	Before turning on the power supply
		OFF	Transmission interval (10 minutes or more)			
SW1-5	Function switch of LOSSNAY	ON	LOSSNAY is operation from LONWORKS.	Please turn on the switch when LOSSNAY is operation from LONWORKS.	OFF	Before turning on the power supply
		OFF	LOSSNAY interlocks with the indoor unit	Please turn off the switch when LOSSNAY interlocks with the indoor units.		
SW1-6	Function switch of Mr.SLIM *Function effective at SW1-2 OFF	ON	Mr.SLIM is operation from LONWORKS.	Please turn on the switch when Mr.SLIM is operation from LONWORKS	OFF	Before turning on the power supply
		OFF	Mr.SLIM is not operation from LONWORKS.			
SW1-9	Indoor units test run switch	ON	ON(test run) is transmitted to the indoor units		OFF	Always
		OFF	OFF is transmitted to the indoor units			
SW3-2	Initialization switch of the air conditioners units	ON	Connected cancellation command is transmitted to the indoor units		OFF	Always
		OFF	None			

## 2.Object Details

### 2-1.Overview

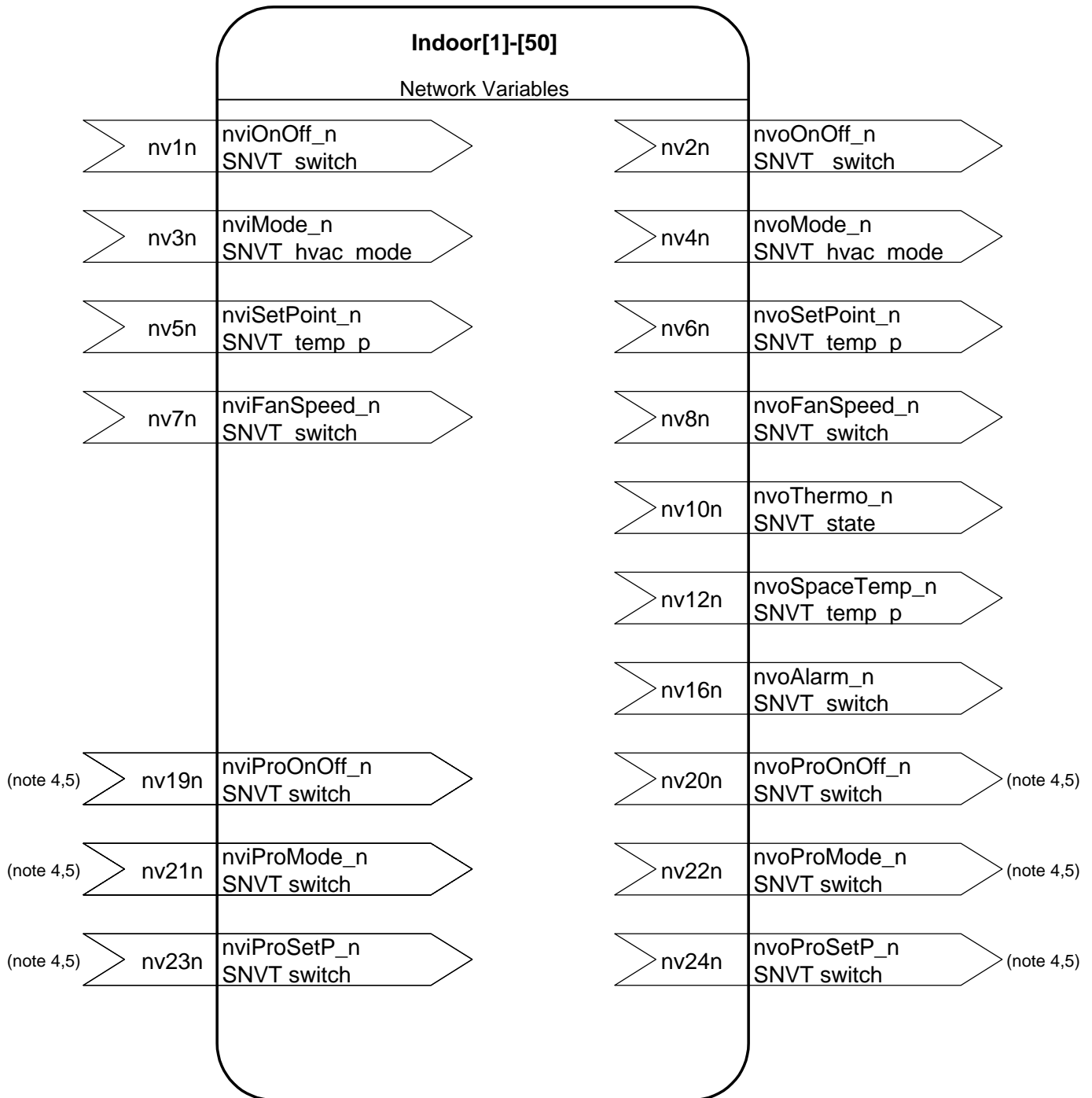


Indoor[0]: The indoor all unit common item  
Indoor[1]~Indoor[50]: indoor unit(01~50)

**2-2.indoor unit**

## NOTES:

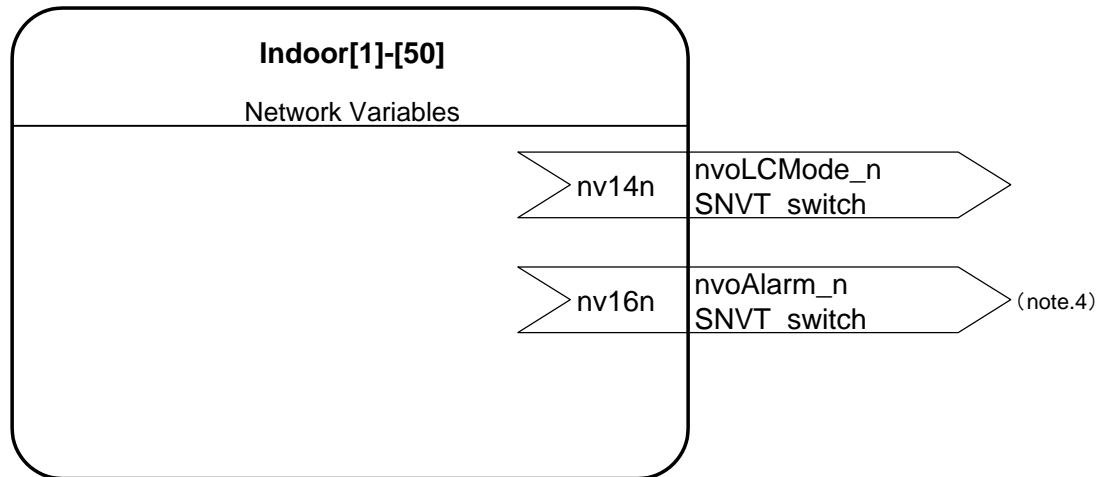
1. stencil for LonMaker:Indoor[1]-[50]
2. "n" of the network variable shows M-NET address of indoor units.
3. There is a case which cannot be used with the system configuration of the air conditioners units.
4. It is possible to use when the "MA" remote controller.
5. For the use of this function, turn ON the switch(SW1-1) on LM-AP.(Factory setting "OFF")

**2-3.Mr.SLIM****NOTES:**

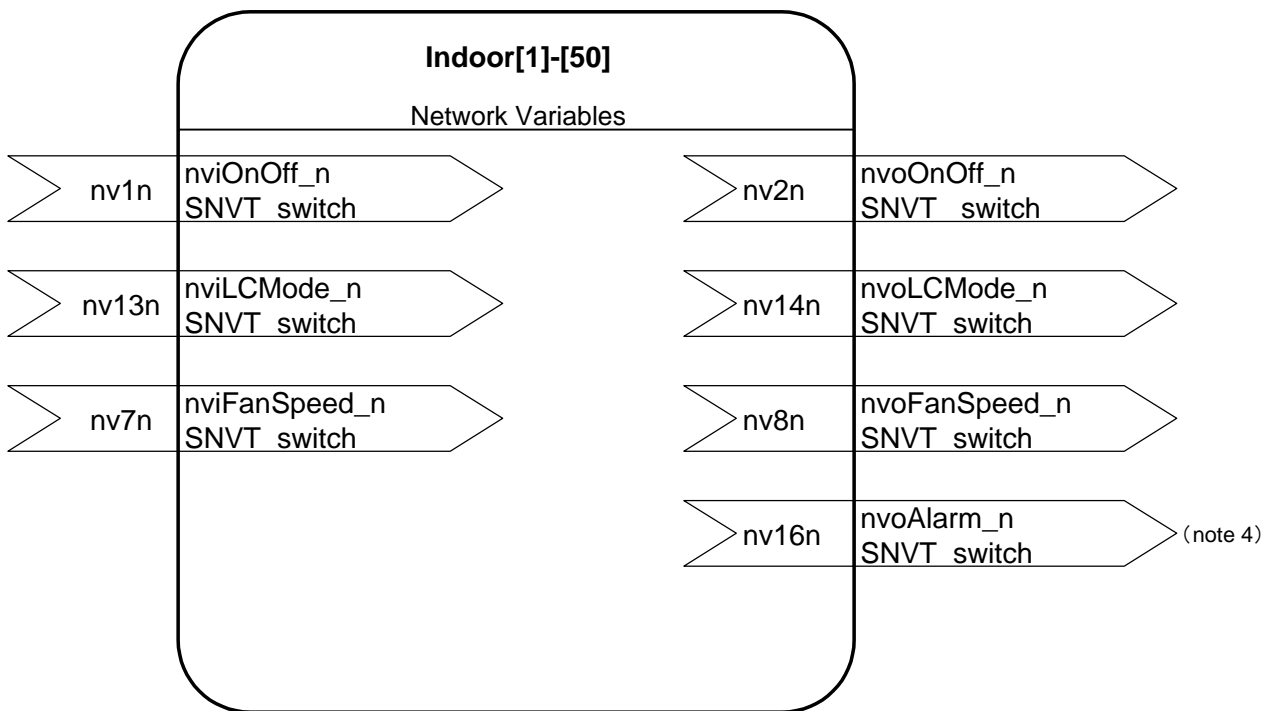
1. stencil for LonMaker:MrSLIM[1]-[50]
2. "n" of the network variable shows M-NET address of Mr.SLIM.
3. Please turn ON the switch(SW1-6) when Mr.SLIM is operation from LonWORKS.(Factory setting "OFF")
4. There is a case which cannot be used with the system configuration of the air conditioners units.
5. For the use of this function, turn ON the switch(SW1-1) on LM-AP.(Factory setting "OFF")

## 2-4.LOSSNAY

(1)LOSSNAY interlocks with the indoor unit.(note 1,3)



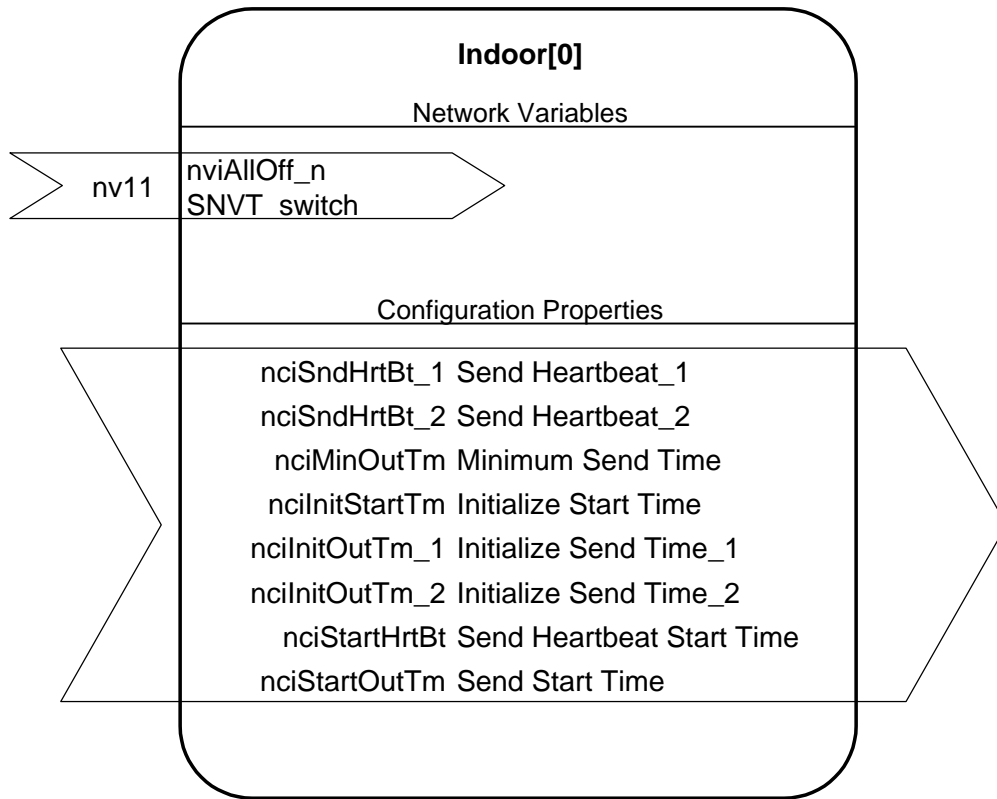
(2)LOSSNAY is operation from LonWORKS.(note 5,6)



NOTES:

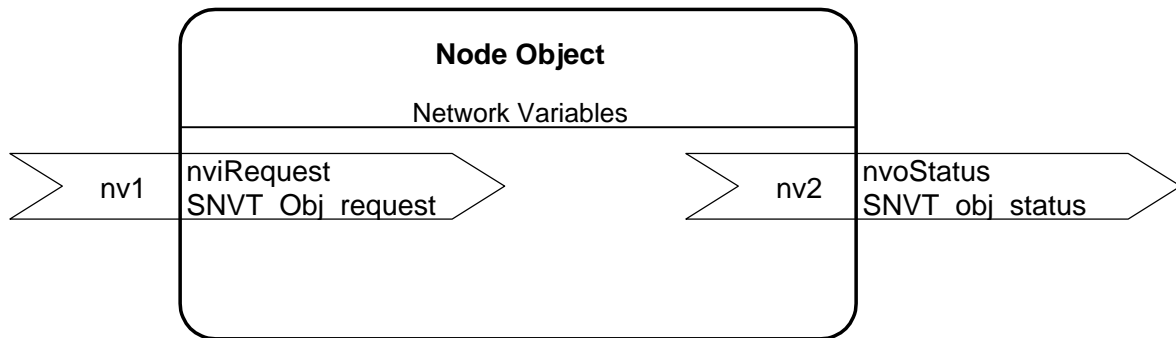
1. stencil for LonMaker:iLOSSNAY[1]-[50]
2. "n" of the network variable shows M-NET address of LOSSNAY.
3. There is a case which cannot be used with the system configuration of the air conditioners units.
4. There is a case which cannot be used with the system configuration of the air conditioners units or the model of LOSSNAY.
5. Please turn ON the switch(SW1-5) when LOSSNAY is operation from LonWORKS.(Factory setting "OFF")
6. stencil for LonMaker:LOSSNAY[1]-[50]

**2-5.Common ( note 1 )**



NOTE  
1. stencil for LonMaker:Indoor[0]

**2-6.Node Object ( note. 1 )**



NOTE  
1. stencil for LonMaker:Node Object

### 3.SNVT Table

nv No. (note 1)	Name (note 1)	Model				SNVT Type	input	output				
		CITY MULTI	Mr.SLIM	LOSSNAY				Transmitted when changing	Auto update	Initialize (note 2)		
				interlocks with the indoor unit	operation from LoWWorks							
1n	Request On/Off	nviOnOff_n	X	X		X	SNVT_switch					
							value	not used	-	-	-	
							state	X	-	-	-	
2n	On/Off run state	nvoOnOff_n	X	X		X	SNVT_switch					
							value	-	not used	not used	not used	
							state	-	X	X	X	
3n	Request Mode	nviMode_n	X	X			SNVT_hvac_mode	X	-	-	-	
4n	Mode state	nvoMode_n	X	X			SNVT_hvac_mode	-	X	X	X	
13n	Request LOSSNAY Mode	nviLCMode_n				X(note 3)	SNVT_switch					
							value	X	-	-	-	
							state	X	-	-	-	
14n	LOSSNAY Mode state	nvoLCMode_n				X(note 3)	X(note 3)	SNVT_switch				
								value	-	X	X	X
								state	-	not used	not used	not used
5n	SetPoint from network	nviSetPoint_n	X	X			SNVT_temp_p	X	-	-	-	
6n	SetPoint state	nvoSetPoint_n	X	X			SNVT_temp_p	-	X	X	X	
7n	Request Fanspeed	nviFanSpeed_n	X	X		X	SNVT_switch					
							value	X	-	-	-	
							state	not used	-	-	-	
8n	FanSpeed state	nvoFanSpeed_n	X	X		X	SNVT_switch					
							value	-	X	X	X	
							state	-	not used	not used	not used	
10n	Thermo On/Off state	nvoThermo_n	X	X			SNVT_state	-	X	-	-	
12n	Temperature state of indoor	nvoSpaceTemp_n	X	X			SNVT_temp_p	-	X	X	-	
16n	Alarm state	nvoAlarm_n	X	X	X(note 3)	X(note 3)	SNVT_switch					
							value	-	not used	-	-	
							state	-	X	-	-	
19n	Request Local Prohibit On/Off	nviProOnOff_n	X	X			SNVT_switch					
							value	not used	-	-	-	
							state	X	-	-	-	
20n	Local Prohibit On/Off state	nvoProOnOff_n	X	X			SNVT_switch					
							value	-	not used	-	-	
							state	-	X	-	-	
21n	Request Local Prohibit mode	nviProMode_n	X	X			SNVT_switch					
							value	not used	-	-	-	
							state	X	-	-	-	
22n	Local Prohibit mode state	nvoProMode_n	X	X			SNVT_switch					
							value	-	not used	-	-	
							state	-	X	-	-	
23n	Request Local Prohibit SetPoint	nviProSetP_n	X	X			SNVT_switch					
							value	not used	-	-	-	
							state	X	-	-	-	
24n	Local Prohibit SetPoint state	nvoProSetP_n	X	X			SNVT_switch					
							value	-	not used	-	-	
							state	-	X	-	-	
11	Request All Off	nviAllOff	X	X	X	X	SNVT_switch					
							value	not used	-	-	-	
							state	X	-	-	-	

NOTES:

- The value "n" is M-NET address of indoor unit  
ex) Request On/Off to the 20th indoor unit.  
nvNo :120  
Name :nviOnOff\_20
- The initialization of output can be changed by the setting of the configuration property.
- There is a case which cannot be used with the system configuration of the air conditioners units or the model of LOSSNAY.



## 4. Network Variables

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### 1n Request On/Off

*network input SNVT\_switch nviOnOff\_n;*

This input network variable is used for ON or OFF request of the indoor unit or ventilator (in case of independent operation) .  
When the ventilator(LOSSNAY) is registered interlocking with the indoor unit, it will ON (for high speed) and OFF interlocking with the indoor unit.  
This nv is not required to use when operating only from the local side like the local remote controller.

#### **Valid Range**

value field : not used

\*The value field is set in 0% usually.

state filed : 0 = Indoor or ventilator Off

state filed : 1 = Indoor or ventilator On

: Else = Indoor or ventilator Off

#### **Default Value**

The default value is determined by the state of the air conditioner (indoor unit).

This variable becomes value = 0 until the value is updated after the power supply of LM-AP.

### 2n On/Off run state

*network output SNVT\_switch nvoOnOff\_n;*

This output network variable indicates the present On/Off state of the indoor unit or ventilator.  
When the ventilator(LOSSNAY) is registered interlocking with the indoor unit, the state of the ventilator will not be output, output, but it acts (On/Off) as same as the indoor unit.

#### **Valid Range**

value field : not used

\*The value field might not be 0,when only the interlocking ventilator(LOSSNAY) unit has been turned on.

state filed : 0 = Indoor or ventilator Off

state filed : 1 = Indoor or ventilator On or TESTRUN

\*The value is 0 while LM-AP is initialized.

#### **When Transmitted**

This output network variable is transmitted promptly as its state changes.

This variable is also transmitted as the state changes by the operation from the local such as the local remote controller.

This variable is output by the ncilnitStartTm (Initialize Start Time) at the powering of LM-AP.

#### **Update Rate**

The value defined by nciSndHrtBt\_1 (Send Heartbeat\_1) and nciMinOutTm (Minimum Send Time) is valid.

#### **Default Service Type**

Acknowledged

### 3n Request mode

*network input SNVT\_hvac\_mode nviMode\_n;*

This input network variable is used to change the operation mode of the indoor unit.

This nv is not required to use when setting the operation mode only from the local side such as the local remote controller.

#### **Valid Range**

HVAC\_AUTO:0 = Auto mode  
 HVAC\_HEAT:1 = Heat mode  
 HVAC\_COOL:3 = Cool mode  
 HVAC\_PRE\_COOL:5 = Dry mode  
 HVAC\_FAN\_ONLY:9 = Fan mode  
 :Else = Fan mode

\*The range of mode setting differs depending on the model of the indoor and outdoor units.

#### **Default Value**

The default value is determined by the state of the air conditioner (indoor unit).

This variable becomes value = 0 until the value is updated after the power supply of LM-AP.

### 4n Mode state

*network output SNVT\_hvac\_mode nvoMode\_n;*

This output network variable indicates the present mode of the indoor unit.

#### **Valid Range**

HVAC\_AUTO:0 = Auto mode  
 HVAC\_HEAT:1 = Heat mode  
 HVAC\_COOL:3 = Cool mode  
 HVAC\_PRE\_COOL:5 = Dry mode  
 HVAC\_FAN\_ONLY:9 = Fan mode  
 HVAC\_NULL:0xFF = Value not available  
 \*The value is 0 while LM-AP is initialized.

#### **When Transmitted**

This output network variable is transmitted promptly as the state changes.

This variable is also transmitted as the state changes by the operation from the local such as the local remote controller.

This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM-AP.

#### **Update Rate**

The value defined by nciSndHrtBt\_1 (Send Heartbeat\_1) is valid.

#### **Default Service Type**

Acknowledged

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## 13n Request LOSSNAY Mode

*network input SNVT\_switch nviLCMode\_n;*

This input network variable is used to change the operation mode of the ventilator (at independent operation without interlocking) .

This nv is not required to use when setting the operation mode only from the local side such as the local remote controller. remote controller.

### **Valid Range**

state field : 0 & value field : 0% = LOSSNAY ventilation  
 state field : 0 & value field : Else = Bypass ventilation  
 state field : 1 & value field : not care = Damper auto  
 state field : Else = Damper auto

### **Default Value**

The default value is determined by the state of the ventilator.

This variable becomes value = 0 until the value is updated after the power supply of LM-AP.

---

## 14n LOSSNAY Mode state

*network output SNVT\_switch nvoLCMode\_n;*

This output network variable indicates the present operation mode of the ventilator.

### **Valid Range**

value field : 0% =LOSSNAY ventilation  
 value field : 100% = Bypass ventilation  
 state field : not used =0 constantly  
 \*The value is 0 while LM-AP is initialized.

### **When Transmitted**

This output network variable is transmitted promptly when the state changes.

It is also transmitted as the state changes by the operation from the local such as the local remote controller.

This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM-AP.

### **Update Rate**

The value defined by nciSndHrtBt\_1 (Send Heartbeat\_1) and nciMinOutTm (Minimum Send Time) is valid.

### **Default Service Type**

Acknowledged

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## 5n Setpoint from network (Both cool and heat)

*network input SNVT\_temp\_p nviSetPoint\_n;*

This input network variable is used to change the temperature setpoint of the indoor unit.

\* The set temperature applied is used for cool/dry/heat/auto modes and not for fan mode operation.

This nv is not required to use when setting the temperature only from the local side such as the local remote controller.

### **Valid Range**

At auto mode : 19 ~ 28 °C

At heat mode : 17 ~ 28 °C

At cool mode : 19 ~ 30 °C

At dry mode : 19 ~ 30 °C

At fan mode : Not available

Unit of set temperature : 1.0°C

\* Be careful that the range of set temperature may differ depending on the model of the indoor and outdoor units.

### **Default Value**

The default value is determined by the state of the air conditioner (indoor unit).

This variable becomes value = 0 until the value is updated after the power supply of LM-AP.

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## 6n Setpoint state (Both cool and heat)

*network output SNVT\_temp\_p nvoSetPoint\_n;*

This output network variable indicates the present temperature setpoint of the indoor unit.

### **Valid Range**

Output range: 17 ~ 30 °C

Temperature unit: 1.0 °C

\*The value is 0 while LM-AP is initialized.

### **When Transmitted**

This output network variable is transmitted promptly when the state changes.

This variable is also transmitted as the state changes by the operation from the local such as the local remote controller.

This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM-AP.

### **Update Rate**

The value defined by nciSndHrtBt\_\_1(SendHeartbeat\_1) is valid.

### **Default Service Type**

Acknowledged

## 7n Request Fan Speed

*network input SNVT\_switch nviFanSpeed\_n;*

This input network variable is used to change the fan speed of the indoor unit or Ventilator (in case of independent operation). This nv is not required to use when setting the airflow rate only from the local side such as the local remote controller.

### **Valid Range**

value field : 0% to 25% = Fan Speed Low  
 value field : 25.5% to 50% = Fan Speed Mid 2  
 value field : 50.5% to 75% = Fan Speed Mid 1  
 value field : 75.5% to 100% = Fan Speed High  
                   : Else = Fan Speed High  
 state field : not used

\* As the number of the step for fan speed differs depending on the model of the indoor unit.

Each indoor unit runs actually as follows. The data received is retained continually.

3-step model : Mid-2 is accepted as Mid-1.

2-step model : Mid-2 and Mid-1 are accepted as Low.

1-step model : Low, Mid-2 and Mid-1 are accepted as high.

### **Default Value**

The default value is determined by the state of the air conditioner (indoor unit).

This variable becomes value = 0 until the value is updated after the power supply of LM-AP.

## 8n Fan Speed state

*network output SNVT\_switch nvoFanSpeed\_n;*

This output network variable indicates the present airflow rate of the indoor unit fan.

### **Valid Range**

value field : 0% to 25% = Fan Speed Low  
 value field : 25.5% to 50% = Fan Speed Mid 2  
 value field : 50.5% to 75% = Fan Speed Mid 1  
 value field : 75.5% to 100% = Fan Speed High  
 state field : not used =0 constantly

\*The value is 0 while LM-AP is initialized.

### **When Transmitted**

This output network variable is transmitted promptly when the state changes.

It is also transmitted as the state changes by the operation from the local such as the local remote controller.

This variable is output by the nciInitStartTm (Initialize Start Time) at the powering of LM adapter.

### **Update Rate**

The value defined by nciSndHrtBt\_\_1(SendHeartbeat\_1) is valid.

### **Default Service Type**

Acknowledged

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## 10n Thermo On/Off state

*network output SNVT\_state nvoThermo\_n;*

This output network variable indicates the On/Off state of the indoor unit, the thermostat (compressor command signal) and the auxiliary heater for heating.  
This nv is used to calculate the electric charge.

### **Valid Range**

bit[0] : 0 = Indoor Off  
 bit[0] : 1 = Indoor On  
 bit[1] : 0 = Indoor thermostat Off (of the indoor unit)  
 bit[1] : 1 = Indoor thermostat On (of the indoor unit)  
 bit[2] : 0 = Supplementary heater Off  
 bit[2] : 1 = Supplementary heater On  
 \*The value is 0 while LM-AP is initialized.

### **When Transmitted**

This output network variable is transmitted promptly when the state changes.

### **Update Rate**

The value designated by nciMinOutTm (Minimum Send Time) is valid.

### **Default Service Type**

Acknowledged

---

## 12n Indoor temperature state

*network output SNVT\_temp\_p nvoSpaceTemp\_n;*

This output network variable indicates the state of the indoor temperature.

### **Valid Range**

Output range : -10~50°C  
 Temperature unit : 0.1°C  
 \*The value is 0 while LM-AP is initialized.

### **When Transmitted**

This variable is transmitted when the indoor temperature changes by more than 1°C.  
 (However, it will not be transmitted for changes within 10 minutes.)  
 \*To obtain the output within 10 minutes, please refer to the nciSndHrtBt\_2 (Send Heartbeat\_2).

### **Update Rate**

The value designated by nciSndHrtBT\_\_2(Send Heartbeat\_2) and nciMinOutTm (Minimum Send Time) is valid.

### **Default Service Type**

Acknowledged

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## 16n Alarm state

*network output SNVT\_switch nvoAlarm\_n;*

This output network variable indicates the abnormality of the indoor unit.  
If the outdoor unit is in alarm state, the indoor unit also stops urgently.  
Therefore all indoor units in a same refrigerant system will transmit alarm state when the outdoor unit is under alarm state.  
However the indoor unit under stopping is excluded.

### **Valid Range**

value field: not used = 0 constantly

state field : 0 = Normal

state field : 1 = Alarm

\*The value is 0 while LM-AP is initialized.

### **When Transmitted**

This variable is transmitted promptly as the state changes.

### **Update Rate**

The maximum update rate is not available.

### **Default Service Type**

Acknowledged

NOTE: The release of the indoor unit nvoAlarm\_n (Alarm State) results in the "Off" command of the nviOnOff\_n (Request On/Off).  
For the nvoAlarm\_n (Alarm State) when the indoor unit is under stopping, transmit "Off" .  
after transmitting "On"

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## 19n Request Local Prohibit On/Off

*network input SNVT\_switch nviProOnOff\_n;*

This input network variable is used to prohibit the On/Off operation of the local remote controller connected to the indoor unit or ventilator (under independent operation without interlocking). When the ventilator is registered to be interlocked with the indoor unit, the On/Off operation of the ventilator will also be prohibited.

### **Valid Range**

value field : not used

state field : 0 = Permit On/Off operation of local remote controller

state field : 1 = Prohibit On/Off operation of local remote controller

: Else = Permit On/Off operation of local remote controller

### **Default Value**

The default value permit On/Off operation of local remote controller

This variable becomes value = 0 until the value is updated after the power supply of LM-AP.

NOTE: For the use of this function, turn ON the switch (SW1-1) on LM-AP.(Factory setting "OFF")

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## 20n Local Prohibit On/Off state

*network output SNVT\_switch nvoProOnOff\_n;*

This output network variable indicates the prohibit/permit state for the On/Off of the local remote controller connected to the indoor unit or ventilator.

### **Valid Range**

value field : not used = 0 constantly

state field : 0 = Permit On/Off of local remote controller

state field : 1 = Prohibit On/Off of local remote controller

\*The value is 0 while LM-AP is initialized.

### **When Transmitted**

This variable is transmitted promptly as the state changes.

### **Update Rate**

The maximum update rate is not available.

### **Default Service Type**

Acknowledged

NOTE: For the use of this function, turn ON the switch (SW1-1) on LM-AP.(Factory setting "OFF")



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## 21n Request Local Prohibit mode

*network input SNVT\_switch nviProMode\_n;*

This input network variable is used to prohibit the mode change operation of the local remote controller connected to the indoor unit.

### **Valid Range**

value field : not used

state field : 0 = Permit mode change operation of local remote controller

state field : 1 = Prohibit mode change operation of local remote controller

: Else = Permit mode change operation of local remote controller

### **Default Value**

The default value permit mode change operation of local remote controller.

This variable becomes value = 0 until the value is updated after the power supply of LM-AP.

NOTE: For the use of this function, turn ON the switch(SW1-1) on LM-AP.(Factory setting "OFF")

---

## 22n Local Prohibit mode state

*network output SNVT\_switch nvoProMode\_n;*

This output network variable indicates the prohibit/permit state of the On/Off operation of the local remote controller connected to the ventilator.

### **Valid Range**

value field : not used = 0 constantly

state field : 0 = Permit mode change operation of local remote controller

state field : 1 = Prohibit mode change operation of local remote controller

\*The value is 0 while LM-AP is initialized.

### **When Transmitted**

This output network variable is transmitted promptly as the state changes.

### **Update Rate**

The maximum update rate is not available.

### **Default Service Type**

Acknowledged

NOTE: For the use of this function, turn ON the switch (SW1-1) on LM-AP.(Factory setting "OFF")

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## 23n Request Local Prohibit SetPoint

*network input SNVT\_switch nviProSetP\_n;*

This input network variable is used to prohibit the temperature setpoint change of the local remote controller connected to the indoor unit.

### **Valid Range**

value field : not used

state field : 0 = Permit temperature setpoint change for local remote controller

state field : 1 = Prohibit temperature setpoint change for local remote controller

: Else = Permit temperature setpoint change for local remote controller

### **Default Value**

The default value permit temperature setpoint change for local remote controller.

This variable becomes value = 0 until the value is updated after the power supply of LM-AP.

NOTE: For the use of this function, turn ON the switch(SW1-1) on LM-AP.(Factory setting "OFF")

---

## 24n Local Prohibit SetPoint state

*network output SNVT\_switch nvoProSetP\_n;*

This output network variable indicates the prohibit/permit of the temperature setting for the local remote controller connected to the indoor unit or ventilator.

### **Valid Range**

value field : not used = 0 constantly

state field : 0 = Permit temperature setpoint change for local remote controller

state field : 1 = Prohibit temperature setpoint change for local remote controller

\*The value is 0 while LM-AP is initialized.

### **When Transmitted**

This output network variable is transmitted promptly as the state changes.

### **Update Rate**

The maximum update rate is not available.

### **Default Service Type**

Acknowledged

NOTE: For the use of this function, turn ON the switch (SW1-1) on LM-AP.(Factory setting "OFF")

---

## 11 Request All Off

*network input SNVT\_switch nviAllOff;*

This input network variable is used for the emergency Off of the indoor unit and all ventilation.

### **Valid Range**

value field : not used

state field : 0 = Emergency Off of indoor unit and ventilator  
: Else = not used

### **Default Value**

The default value is determined by the state of the air conditioner (indoor unit).

This variable becomes value = 0 until the value is updated after the power supply of LM-AP.

## 5.Configuration Properties

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### (1) Send Heartbeat\_1

*network input config SNVT\_time\_sec nciSndHrtBt\_1;*

This network configuration defines the time between the previous and next updating.  
When the set time is elapsed  
from the automatic update or change output of the previous nvoOnOff\_n (On/Off Run State),  
automatic updating will be commenced.  
The objective variables are given below.

- nvoOnOff\_n (On/Off state output)
- nvoMode\_n (Operating mode output)
- nvoLCMode\_n (LOSSNAY operation mode output)
- nvoSetPoint\_n (Temperature setpoint output)
- nvoFanSpeed\_n (Fan airflow rate output)

#### **Valid Range**

The valid range covers from 0.0,600.0 to 6540.0 seconds (per 60 seconds).  
The setting to 0.0 or 6553.5 seconds makes the automatic updating invalid.  
The setting to 0.1 ~ 599.9 seconds results in 600.0seconds.  
The setting to 6540.1 ~ 6553.4 seconds results in 6540.0 seconds.

#### **Default Value**

6553.5 seconds (without automatic update)

---

### (2) Send Heartbeat\_2

*network input config SNVT\_time\_sec nciSndHrtBt\_2;*

This network configuration defines the time between the previous and next updating.  
When the set time is elapsed from the previous updating, automatic updating will be commenced.  
The objective variable is given below.

- nvoSpaceTemp\_n (Indoor Temperature State)

#### **Valid Range**

The valid range covers from 0.0,600.0 to 6540.0 seconds (per 60 seconds).  
The setting to 0.0 or 6553.5 seconds makes the automatic updating invalid.  
The setting to 0.1 ~ 599.9 seconds results in 600.0 seconds.  
The setting to 6540.1 ~ 6553.4 seconds results in 6540.0 seconds.

To obtain the output within 10 minutes, set the connecting indoor unit to 30sets or less.  
Please turn ON the switch(SWI-3) on LM-AP.(Factory setting "OFF")  
The valid range in this case becomes as 0.0,60.0 ~ 6540.0 seconds (per 60 seconds).  
The setting to 0.0 or 6553.5 seconds makes the automatic updating invalid.  
The setting to 0.1 ~ 59.9 seconds results in 60.0 seconds.  
The setting to 6540.1 ~ 6553.4 seconds results in 6540.0 seconds.

#### **Default Value**

6553.5seconds (without automatic update)

### (3) Minimum Send Time

*network input config SNVT\_time\_sec nciMinOutTm;*

This configuration property defines the minimum send time between the output network variables.  
The objective network variables are given below.

- nvoOnOff\_n(On/Off Run State )
- nvoMode\_n(Mode State)
- nvoLCMode\_n(LOSSNAY Mode State)
- nvoSetPoint\_n(Setpoint State)
- nvoFanSpeed\_n(Fan Speed State)
- nvoThermo\_n(Thermostat On/Off State )
- nvoSpaceTemp\_n(Indoor Temperature State )
- nvoAlarm\_n(Alarm State)
- nvoProOnOff\_n(Local Prohibit On/Off State)
- nvoProMode\_n(Local Prohibit Mode State)
- nvoProSetP\_n(Local Prohibit SetPoint State )

#### **Valid Range**

The valid range covers from 0,1.0 to 600.0 seconds (per 1 second).

The setting to 0.0 or 6553.5 seconds makes the minimum send time setting invalid.

The setting to 0.1 ~ 0.9 seconds results in 1.0 second.

The setting to 600.1 ~ 6553.4 seconds results in 600.0 seconds.

#### **Default Value**

6553.5 seconds (Setting invalid)

### (4) Initialize Start Time

*network input config SNVT\_time\_sec nciInitStartTm*

This configuration property defines the starting time of the output network variables at the initial output.  
The objective network variables are given below.

- nvoOnOff\_n(On/Off Run State )
- nvoMode\_n(Mode State)
- nvoLCMode\_n(LOSSNAY Mode State)
- nvoSetPoint\_n(Setpoint State)
- nvoFanSpeed\_n(Fan Speed State)

#### **Valid Range**

The valid range covers from 0,900.0 to 3600.0 seconds (per 60 seconds).

The setting to 0.0 or 6553.5 seconds makes the initial output time setting invalid.

The setting to 0.1 ~ 899.9 seconds results in 900.0 seconds.

The setting to 3600.1 ~ 6553.4 seconds results in 3600.0 seconds.

#### **Default Value**

6553.5 seconds (Setting invalid)

---

## (5) Initialize Send Time\_1

### *network input config SNVT\_time\_sec nciInitOutTm\_1*

This configuration property defines the minimum send time between the output network variables at initial output.

This configuration is valid when setting the Initialize Start Time to other values than 0.0 second.

The objective network variables are given below.

- nvoOnOff\_n (On/Off Run State )
- nvoMode\_n (Mode State)
- nvoLCMode\_n (LOSSNAY Mode State)
- nvoSetPoint\_n (Setpoint State)
- nvoFanSpeed\_n (Fan Speed State)

### **Valid Range**

The valid range covers from 0.0,0.1 to 1.0 second (per 100m seconds).

The setting to 0.0 or 6553.5 seconds makes the initial output minimum send time setting invalid.

The setting to 1.1 ~ 6553.4 seconds results in 1.0 second.

### **Default Value**

6553.5 seconds (Setting invalid)

---

## (6) Initialize Send Time\_2

### *network input config SNVT\_time\_sec nciInitOutTm\_2*

This configuration property defines the minimum send time between each unit of the indoor, Mr.SLIM and ventilator at the initial output.

This configuration is valid when setting the Initialize Start Time to other values than 0.0 second.

The objective network variables are given below.

- nvoOnOff\_n (On/Off Run State )
- nvoMode\_n (Mode State)
- nvoLCMode\_n (LOSSNAY Mode State)
- nvoSetPoint\_n (Setpoint State)
- nvoFanSpeed\_n (Fan Speed State)

### **Valid Range**

The valid range covers from 0.0,5.1 to 50.0 second (per 1second).

The setting to 0.0 or 6553.5 seconds makes the initial output minimum send time setting invalid.

The setting to 0.1 ~ 4.9 seconds results in 5.0 seconds.

The setting to 50.1 ~ 6553.4 seconds results in 50.0 seconds.

### **Default Value**

6553.5 seconds (Setting invalid)

---

## (7) Send Heartbeat Start Time

*network input config SNVT\_time\_sec nciStartHrtBt*

This configuration property defines the start time of automatic updating at the powering of the LM-AP.  
The objective network configurations are given below.

- nciSndHrtBt\_1 (Send Heartbeat\_1)
- nciSndHrtBt\_2 (Send Heartbeat\_2)

### **Valid Range**

The valid range covers from 0.0,1200.0 to 6540.0 seconds (per 60 seconds).

The setting to 0.0 or 6553.5 seconds results in 1800.0 seconds.

The setting to 0.1 ~ 1199.9 seconds results in 1200.0 seconds.

The setting to 6540.1 ~ 6553.4 seconds results in 6540.0 seconds.

### **Default Value**

6553.5 seconds (judged as 1800 seconds)

---

## (8) Send Start Time

*network input config SNVT\_time\_sec nciStartOutTm*

This configuration property defines the start time of the output network variable change at powering of LM-AP.

The objective network variables are given below.

- nvoOnOff\_n (On/Off Run State )
- nvoMode\_n (Mode State)
- nvoLCMode\_n (LOSSNAY Mode State)
- nvoSetPoint\_n (Setpoint State)
- nvoFanSpeed\_n (Fan Speed State)
- nvoThermo\_n (Thermostat On/Off State )
- nvoSpaceTemp\_n (Indoor Temperature State )
- nvoAlarm\_n (Alarm State)
- nvoProOnOff\_n (Local Prohibit On/Off State)
- nvoProMode\_n (Local Prohibit Mode State)
- nvoProSetP\_n (Local Prohibit SetPoint State )

### **Valid Range**

The valid range covers from 0.0,1200.0 to 6540.0 seconds (per 60 seconds).

The setting to 0.0 or 6553.5 seconds results in 1800.0 seconds.

The setting to 0.1 ~ 1199.9 seconds results in 1200.0 seconds.

The setting to 6540.1 ~ 6553.4 seconds results in 6540.0 seconds.

### **Default Value**

6553.5 seconds (judged as 1800 seconds)

## 6. Node Object

### 1n Object Request

---

network input *SNVT\_obj\_reqst* *nviRequest*;

#### Valid Range

object_id	: 0	=valid request
	:Else	=invalid request
object_request	:2(RQ_UPDATE_STATUS)	=valid request
	:Else	=invalid request

#### Default Value

The default value is 0.

### 2n Object Status

---

network output *SNVT\_obj\_status* *nvoStatus*;

#### Valid Range

bit[0] invalid id	: 0	=object_id is valid request
	: 1	=object_id is invalid request
bit[1] object_request	: 0	=object_request is valid request
	: 1	=object_request is invalid request

#### When Transmitted

This output network variable is transmitted promptly when object request is input.

#### Update Rate

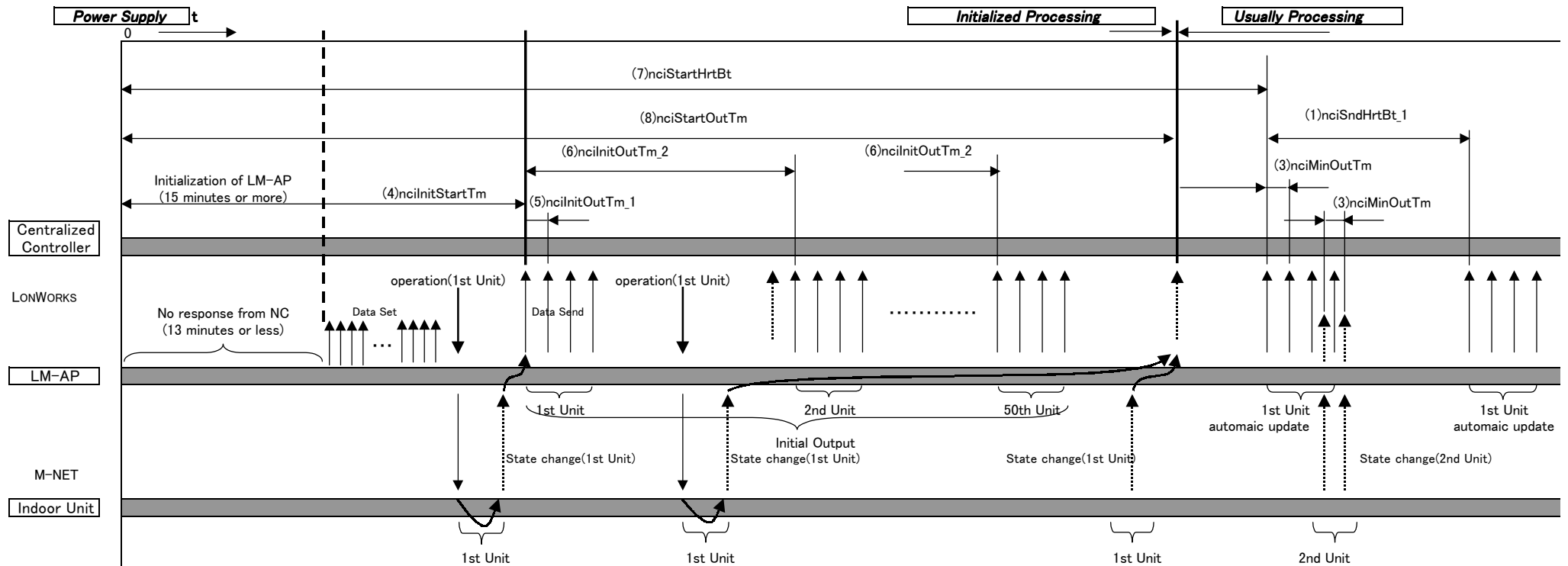
The maximum update rate is not available.

#### Default Service Type

Acknowledged



**Communication timing when power supply of LM-AP is turned on**



No.	nci	Name	Range	Default
(1)	nciSndHrtBt_1	Send Heartbeat_1	0.600~6540.6553.5sec	6553.5sec(without automatic update)
(2)	nciSndHrtBt_2	Send Heartbeat_2	0.600~6540.6553.5sec	6553.5sec(without automatic update)
(3)	nciMinOutTm	Minimum Send Time	0.01~600.6553.5sec	6553.5sec(setting invalid)
(4)	ncilnitStartTm	Initialize Start Time	0.900~3600.6553.5sec	6553.5sec(setting invalid)
(5)	ncilnitOutTm_1	Initialize Send Time_1	0.01~1.0.6553.5sec	6553.5sec(setting invalid)
(6)	ncilnitOutTm_2	Initialize Send Time_2	0.05~50.6553.5sec	6553.5sec(setting invalid)
(7)	nciStartHrtBt	Send Heartbeat Start Time	0.1200~6540.6553.5sec	6553.5sec(judged as 1800 seconds)
(8)	nciStartOutTm	Send Start Time	0.1200~6540.6553.5sec	6553.5sec(judged as 1800 seconds)