Application description for Room panels

Version 2.00

Moers, 03/21/2014

Content

1. Applications....3
1.1. Application data....3
1.2. Automation functions....4
1.2.1 VDI3813 – Functions....4
1.2.2 Extended functions....5
1.3. Device templates - Interfaces....6
1.3.1 Applications....6
1.4. Description of software objects....27
1.4.1 Node object....27
1.4.2 Measurement of relative humidity....29
1.4.3 Operating module....31
1.4.4 Switch....34
1.4.5 Scene Panel....37
1.4.6 Occupancy control....39
1.4.7 Dew point calculation....42
1.4.8 Space comfort control....44
1.4.9 Thermal control....53
1.4.10 HVAC actuator....56

1. Applications

Using one of the room panel applications you can capture and control different HVAC systems. The following applications/room panels are available:

Room panel	Application	NodeObject	Command Module	Switch	ScenePanel	Occupancy Controller	DewPoint Controller	SpaceComfort Controller	Thermo Controller	HvacActuator	RelHumidity Sensor
dialog 8	SC341508EC_11	1	1	8	1	1	1	1	1	-	-
clima LCD	SC231505EC_11	1	1	8	1	1	1	1	1	-	-
clima RO	SC231301EC_11	1	1	4	1	1	1	1	1	-	-
clima RCM	SC231302EC_11	1	1	4	1	1	1	1	1	-	-
clima RCM-FC	SC231334EC_01	1	1	10	1	1	1	1	1	3	-
tactio S / S-Rh	SC341701EC_01	1	1	8	1	1	1	1	1	-	1
tactio L / L-Rh	SC341708EC_01	1	1	8	1	1	1	1	1	-	1

The software is divided into logical objects in accordance with LonMark™ Interoperability Guidelines.

1.1. Application data

You can select the desired application in the spega device template manager. All the required application files, resource files and plug-ins for the relevant project will be loaded.

Application	**SC341508EC_11**
Room panel	dialog 8
Application files	SC341508EC_11.APB
	SC341508EC_11.NXE
	SC341508EC_11.XIF
	SC341508EC_11.XFB
Ressource files	econtrol Ressource Files required, from version 2.50 onwards
Plug-ins	Room panel device plug-in, object plug-ins

Application	**SC231505EC_11**
Room panel	clima LCD
Application files	SC231505EC_11.APB
	SC231505EC_11.NXE
	SC231505EC_11.XIF
	SC231505EC_11.XFB
Ressource files	econtrol Ressource Files required, from version 2.50 onwards
Plug-ins	Room panel device plug-in, object plug-ins

Application	**SC231301EC_11**
Room panel	clima RO, nova RO
Application files	SC231301EC_11.APB
	SC231301EC_11 .NXE
	SC231301EC_11 .XIF
	SC231301EC_11 .XFB
Ressource files	econtrol Ressource Files required, from version 2.50 onwards
Plug-ins	Room panel device plug-in, object plug-ins

Application	**SC231302EC_11**
Room panel	clima RCM, nova RCM
Application files	SC231302EC_11.APB
	SC231302EC_11 .NXE
	SC231302EC_11 .XIF
	SC231302EC_11 .XFB
Ressource files	econtrol Ressource Files required, from version 2.50 onwards
Plug-ins	Room panel device plug-in, object plug-ins

Application	**SC231334EC_01**
Room panel	clima RCM-FC, nova RCM-FC
Application files	SC231334EC_01 .APB
	SC231334EC_01 .NXE
	SC231334EC_01 .XIF
	SC231334EC_01 .XFB
Ressource files	econtrol Ressource Files required, from version 2.50 onwards
Plug-ins	Room panel device plug-in, object plug-ins

Application	**SC341701EC_01**
Room panel	tactio S, tactio S-Rh
Application files	SC341701EC_01 .APB
	SC341701EC_01 .NXE
	SC341701EC_01 .XIF
	SC341701EC_01 .XFB
Ressource files	econtrol Ressource Files required, from version 2.54 onwards
Plug-ins	Room panel device plug-in, object plug-ins

Application	**SC341708EC_01**
Room panel	tactio L, tactio L-Rh
Application files	SC341708EC_01 .APB
	SC341708EC_01 .NXE
	SC341708EC_01 .XIF
	SC341708EC_01 .XFB
Ressource files	econtrol Ressource Files required, from version 2.52 onwards
Plug-ins	Room panel device plug-in, objec plug-ins

The software complies with LonMark™ Interoperability Guidelines. When using LNS-based integration tools we recommend the use of the resource files listed.

1.2. Automation functions

You can achieve a wide range of various automation functions with the spega room panels. Their availability depends on which room panel is used and how the objects are configured.

1.2.1 VDI3813 – Functions

Sensor functions

- Window monitoring
- Air temperature measurement
- Relative humidity measurement

Operating and display functions

- Actuate light
- Actuate sunshade
- Actuate drive
- Adjust temperature setpoint
- Select room utilization type
- Signal presence

Actuator functions

- Control drive actuator

Application functions

- Occupancy evaluation
- Sequence control
- Manipulated value limiting
- Control via room utilization types
- Automatic thermal control
- Energy mode selection
- Energy mode selection with start optimization
- Setpoint calculation
- Function selection
- Temperature control (heating/cooling)
- Air quality control
- Fan control
- Night time cooling

1.2.2 Extended functions

Sensor functions

- Measurement of relative Humidity

Application functions

- Dew point calculation

Object behaviour

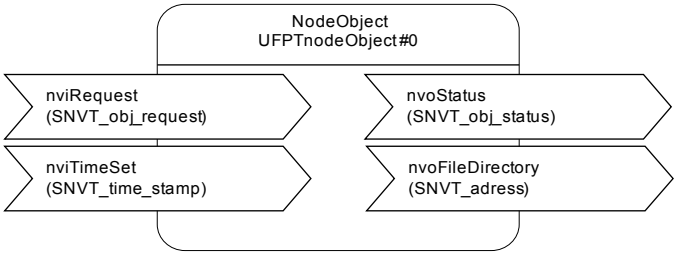
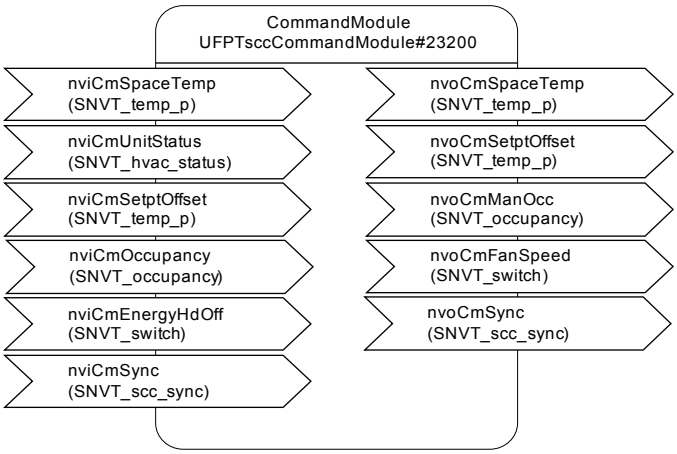
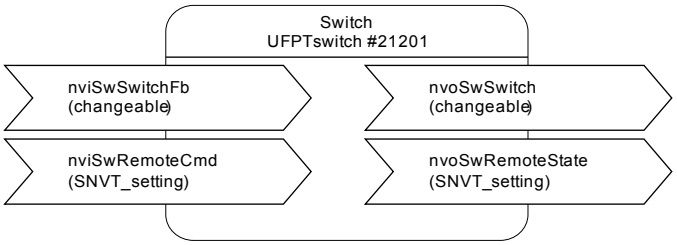
- Action in the event of communication faults
- Action following resumption of power supply or reset
- Switchable network variable types
- Transmission response for output network variables
- Valve rinsing
- Pulse width modulation for actuators

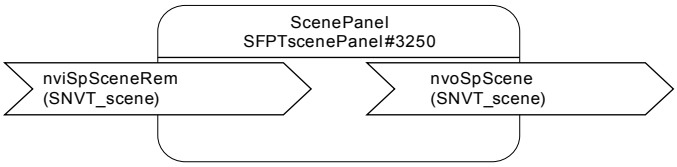
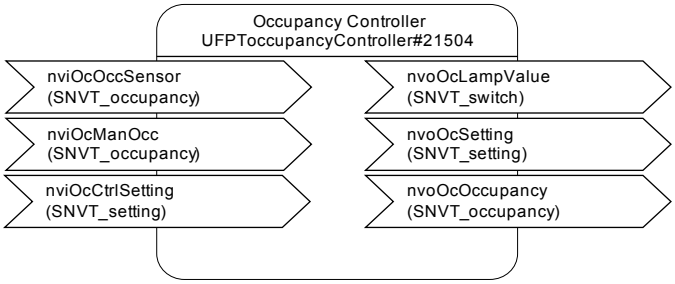
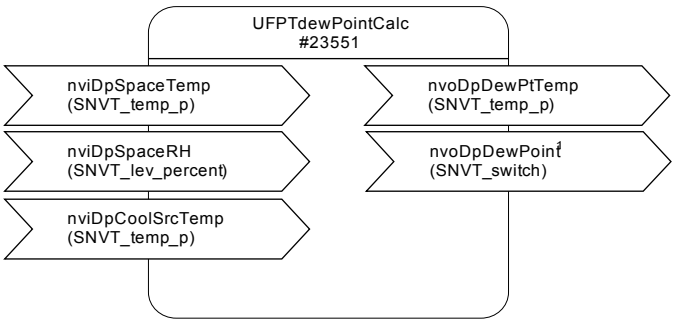
1.3. Device templates - Interfaces

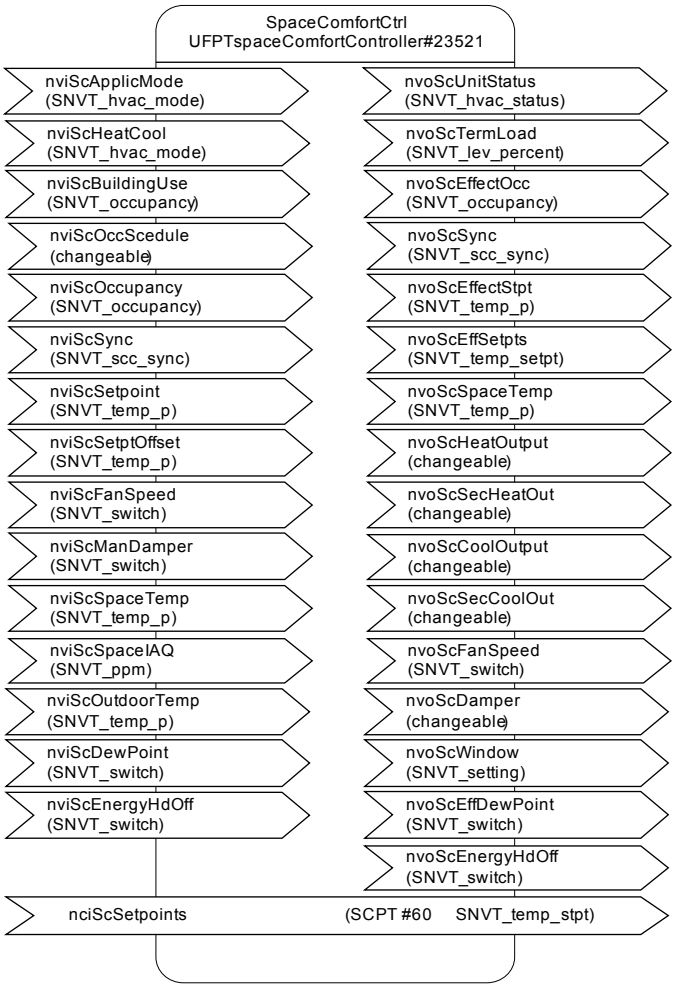
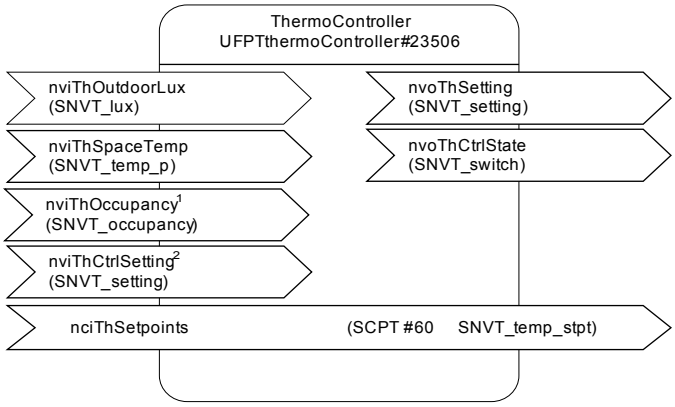
This section contains a brief description of the device templates of the applications available for the device.

1.3.1 Applications

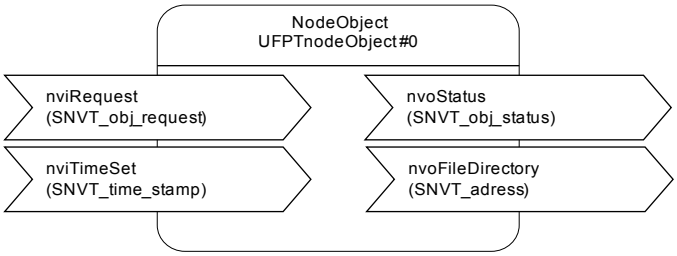
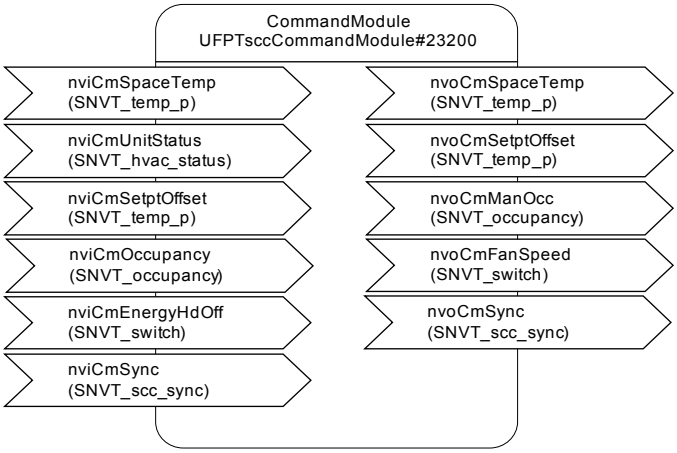
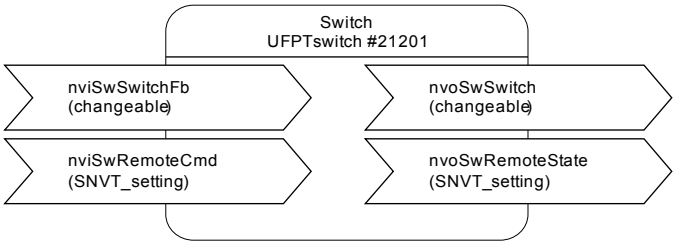
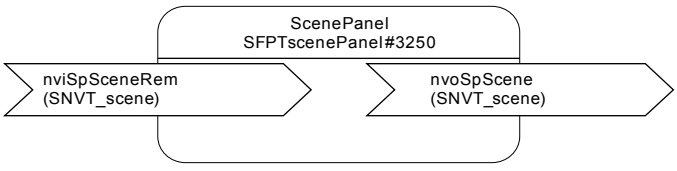
SC341508EC_11

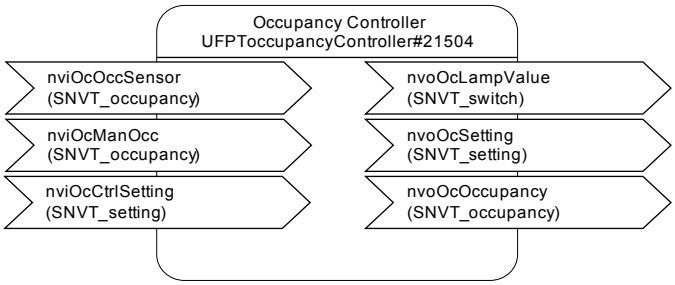
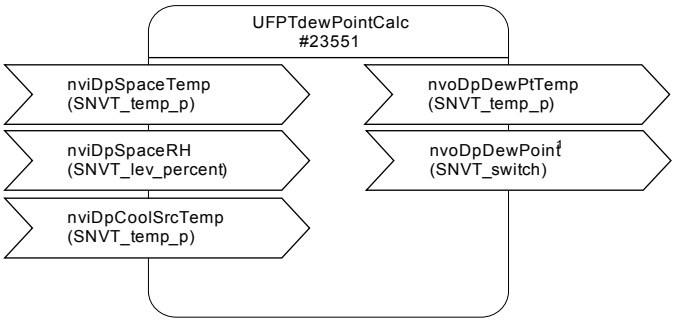
Count	Object	Interface
1	NodeObject UFPT #0	
1	CommandModule UFPT #23200	
8	Switch UFPT #21201	

Count	Object	Interface
1	ScenePanel UFPT #3250	
1	Occupancy Controller UFPT #21504	
1	DewPoint Calculator UFPT#23551	

Count	Object	Interface
1	SpaceComfort Controller UFPT #23521	
1	ThermoController UFPT #23506	

SC231505EC_11

Count	Object	Interface
1	NodeObject UFPT #0	
1	CommandModule UFPT #23200	
8	Switch UFPT #21201	
1	ScenePanel UFPT #3250	

Count	Object	Interface
1	Occupancy Controller UFPT #21504	
1	DewPoint Calculator UFPT#23551	

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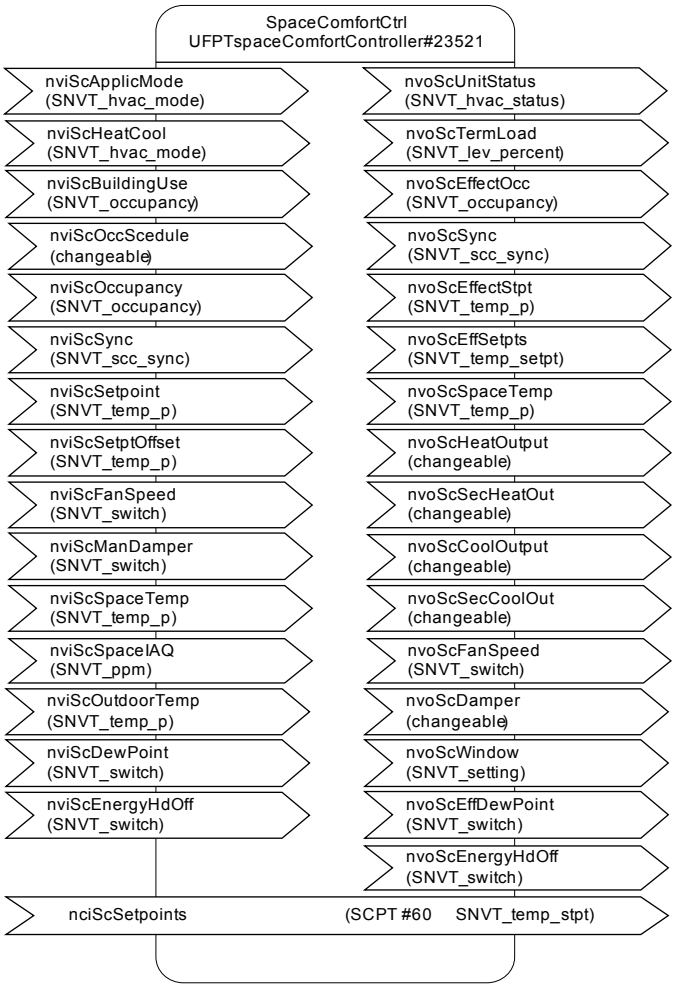
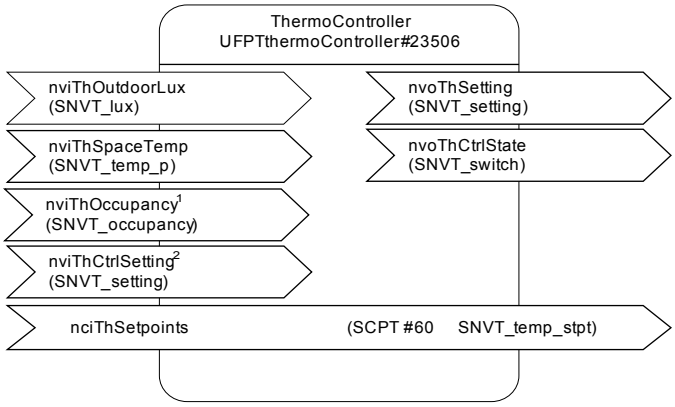
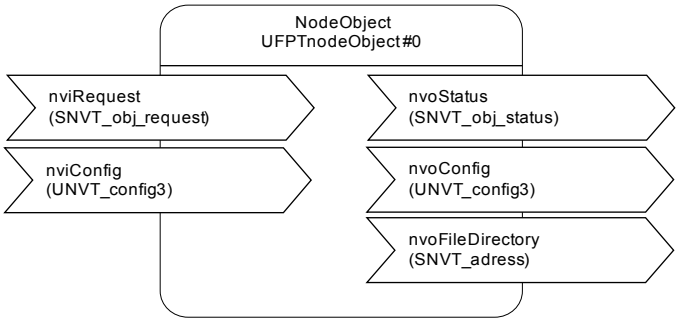
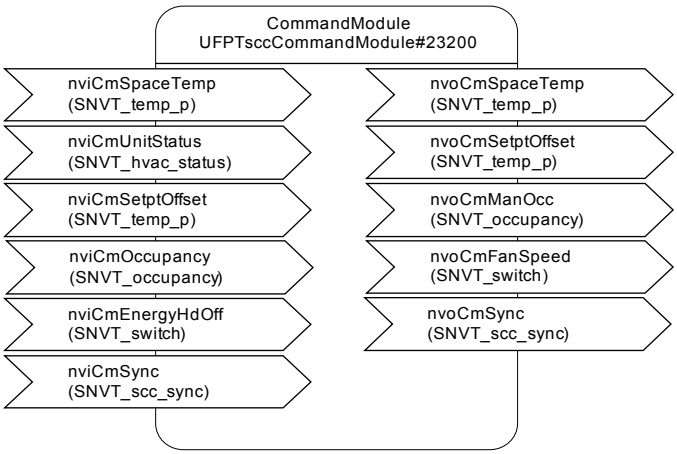
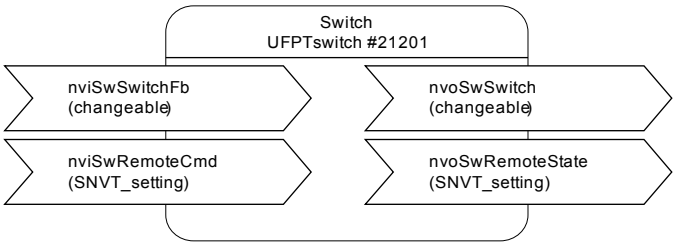
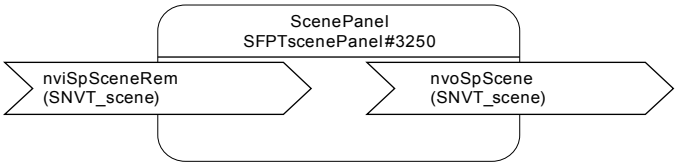
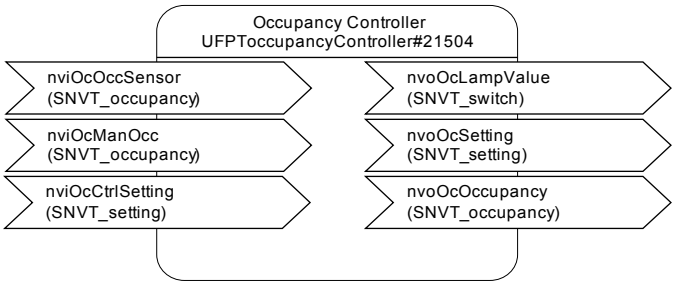
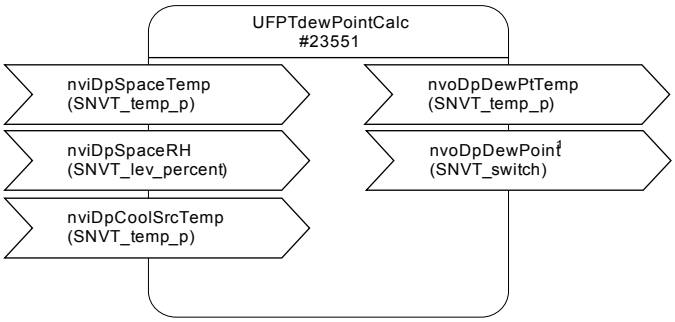
1	SpaceComfort Controller UFPT #23521	
1	ThermoController UFPT #23506	

SC231301EC_11

Count	Object	Interface
1	NodeObject UFPT #0	
1	CommandModule UFPT #23200	
4	Switch UFPT #21201	
1	ScenePanel UFPT #3250	

Count	Object	Interface
1	Occupancy Controller UFPT #21504	
1	DewPoint Calculator UFPT#23551	

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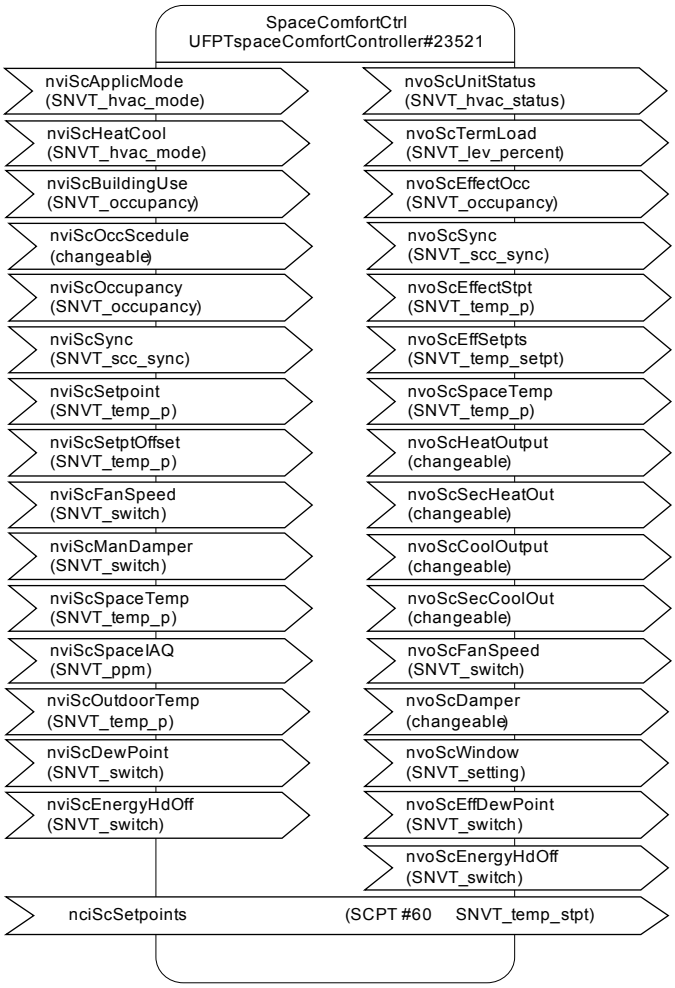
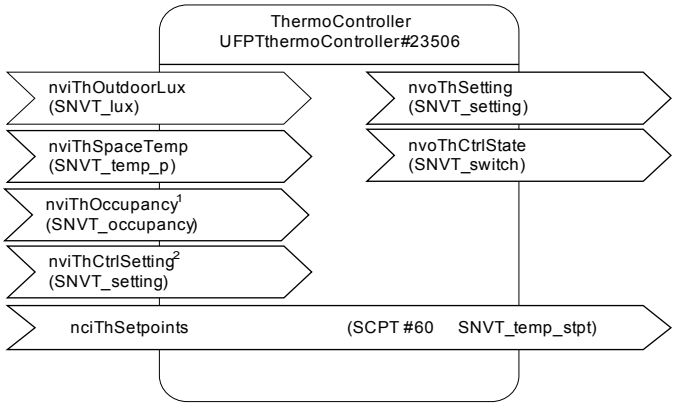
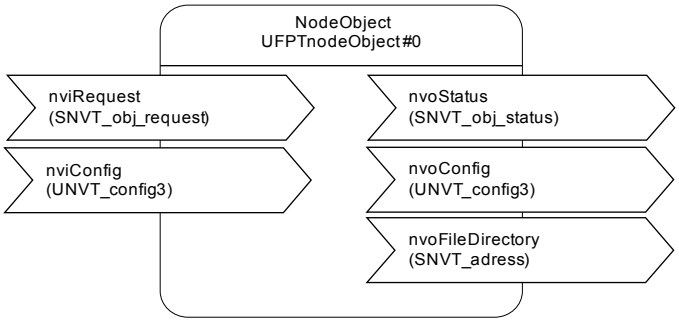
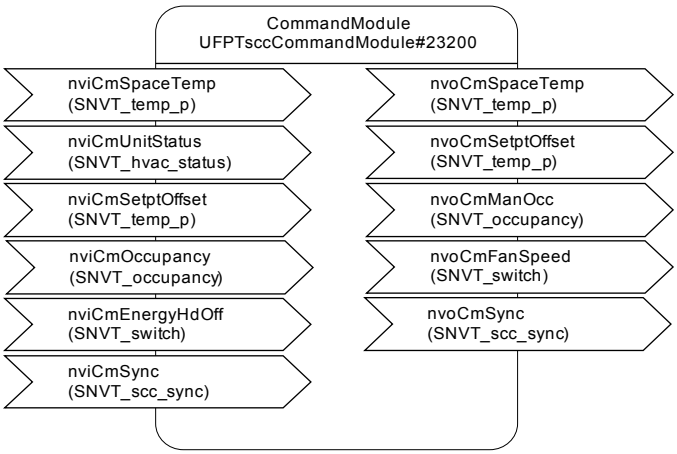
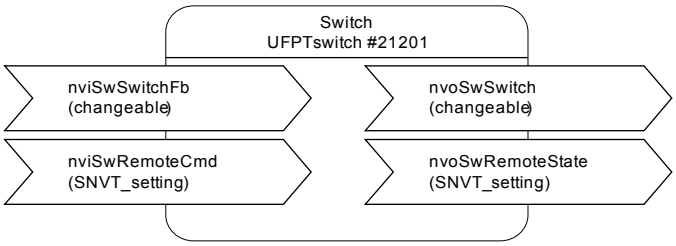
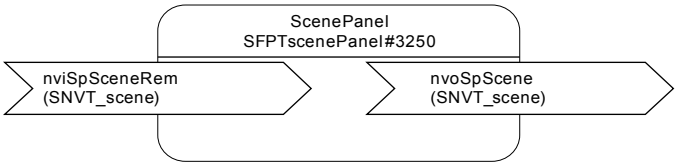
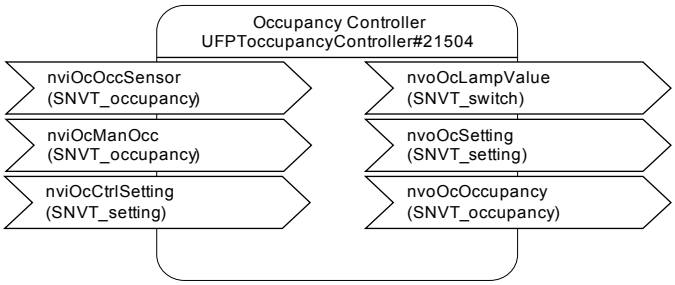
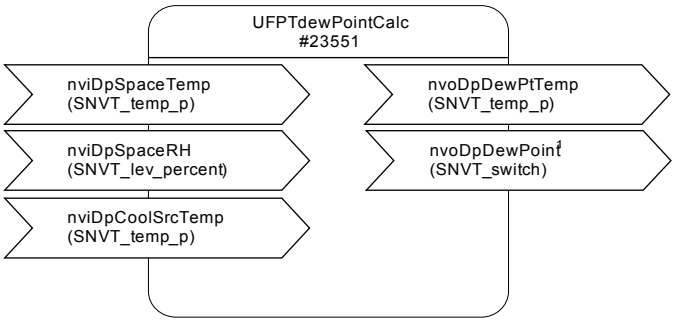
1	SpaceComfort Controller UFPT #23521	
1	ThermoController UFPT #23506	

SC231302EC_11

Count	Object	Interface
1	NodeObject UFPT #0	
1	CommandModule UFPT #23200	
4	Switch UFPT #21201	
1	ScenePanel UFPT #3250	

Count	Object	Interface
1	Occupancy Controller UFPT #21504	
1	DewPoint Calculator UFPT#23551	

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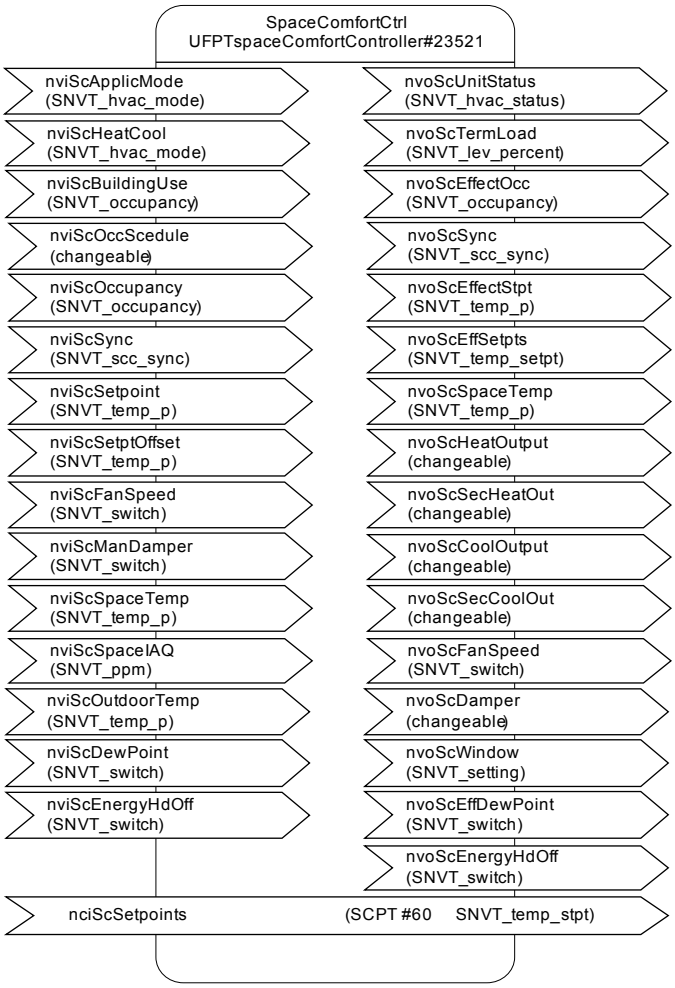
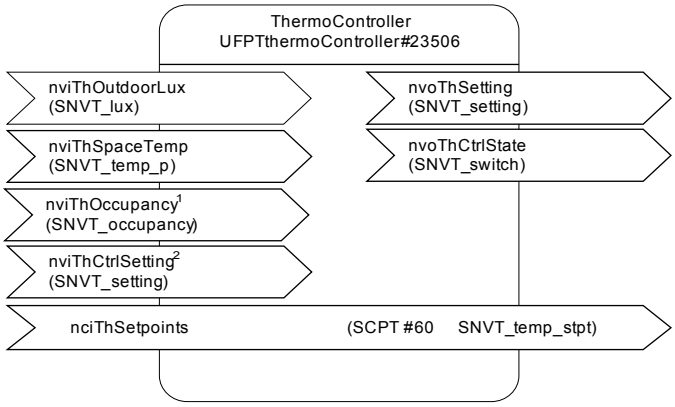
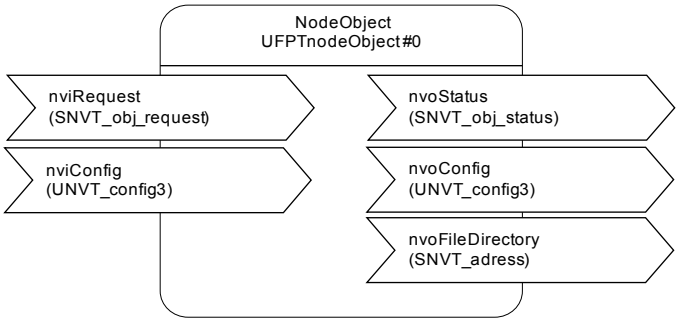
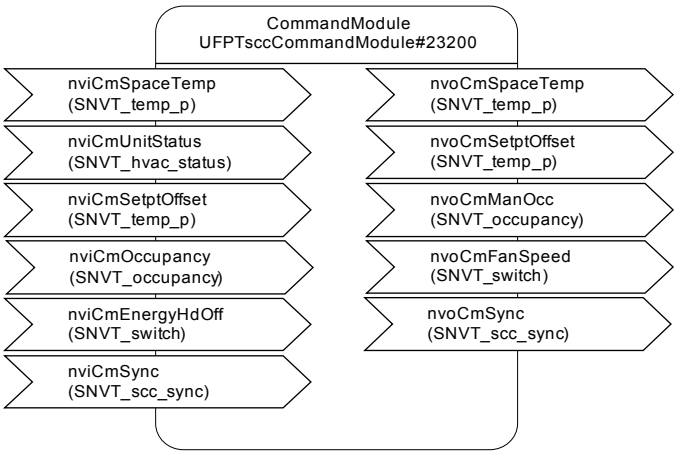
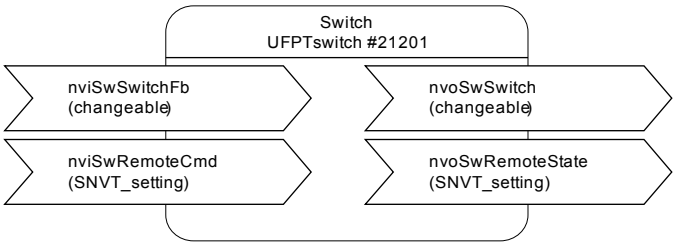
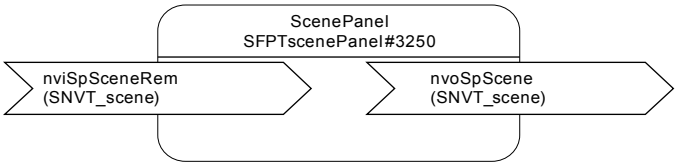
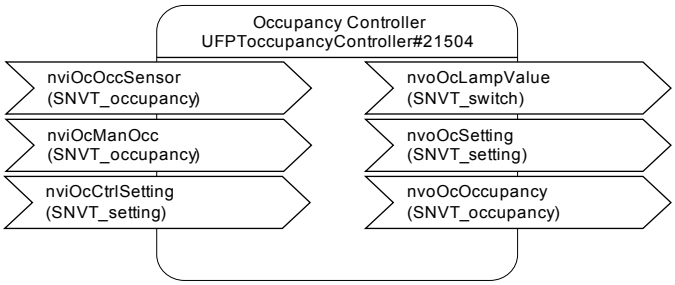
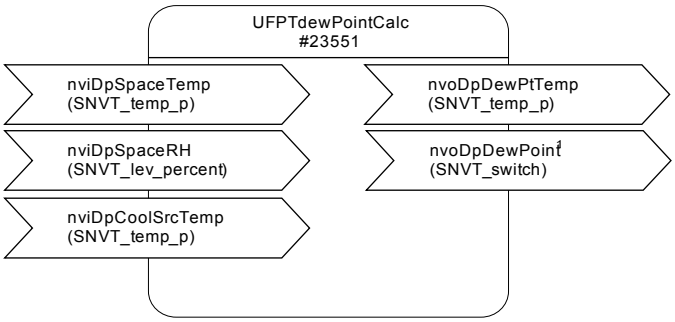
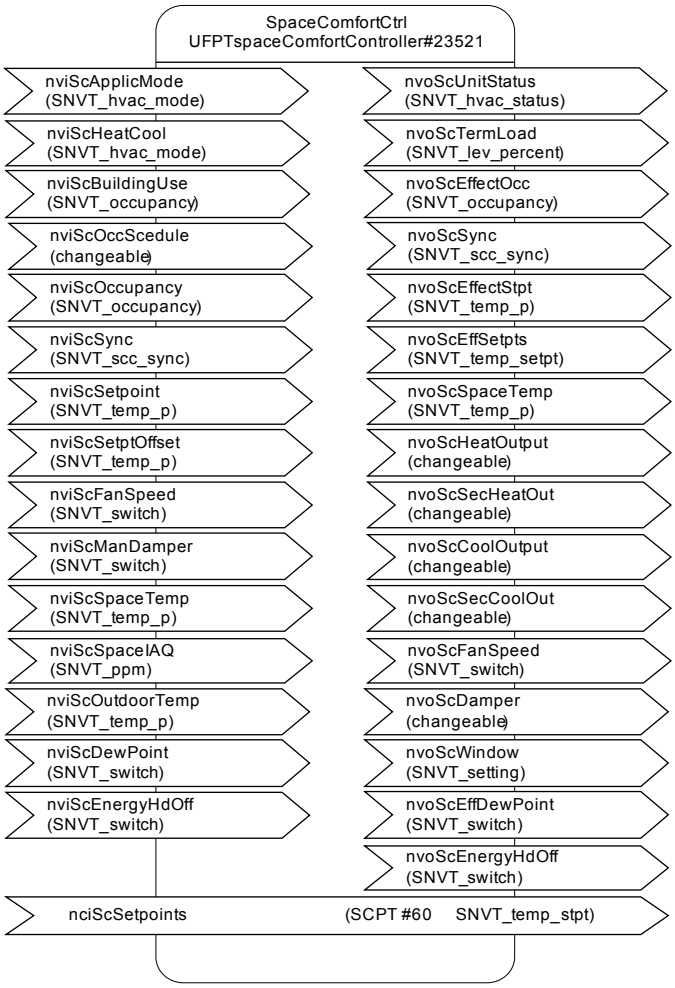
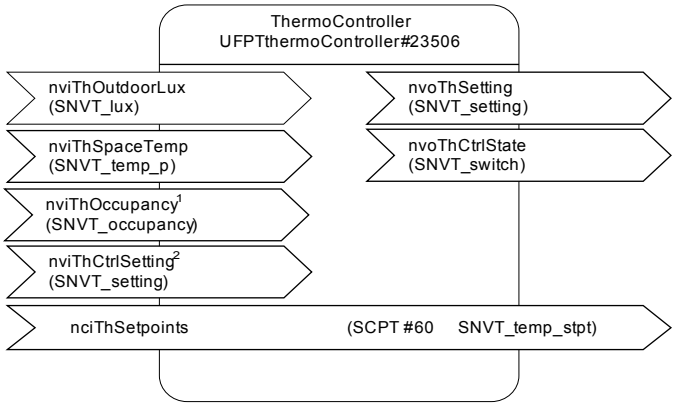
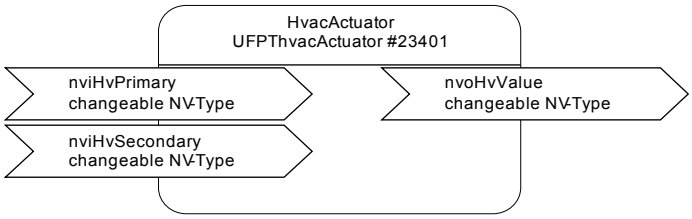
1	SpaceComfort Controller UFPT #23521	
1	ThermoController UFPT #23506	

SC231334EC_01

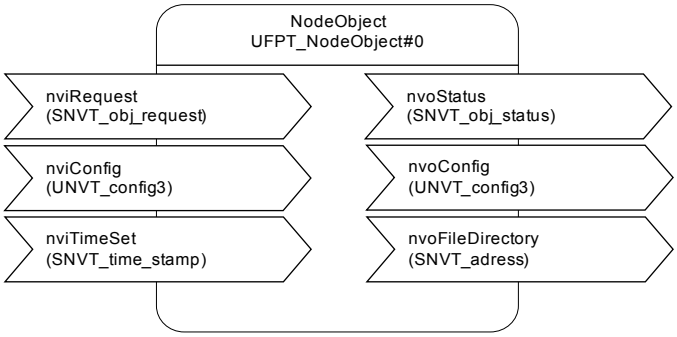
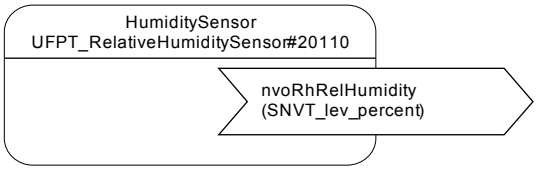
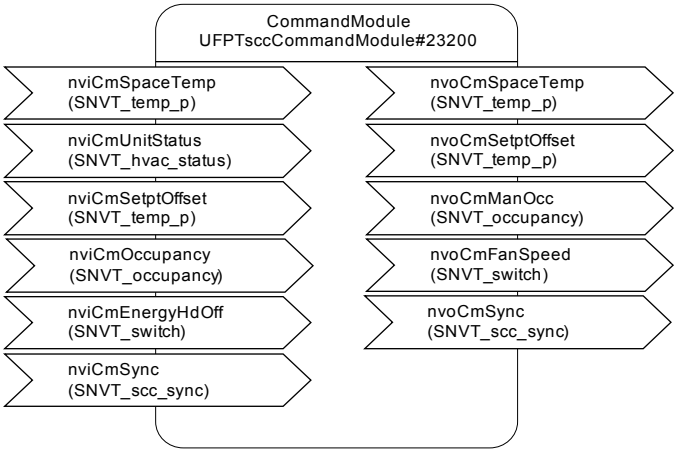
Count	Object	Interface
1	NodeObject UFPT #0	
1	CommandModule UFPT #23200	
10	Switch UFPT #21201	
1	ScenePanel UFPT #3250	

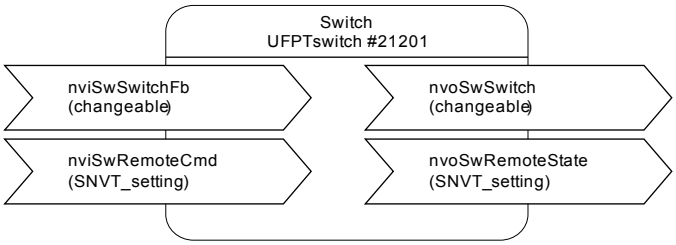
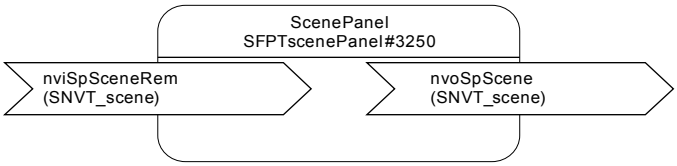
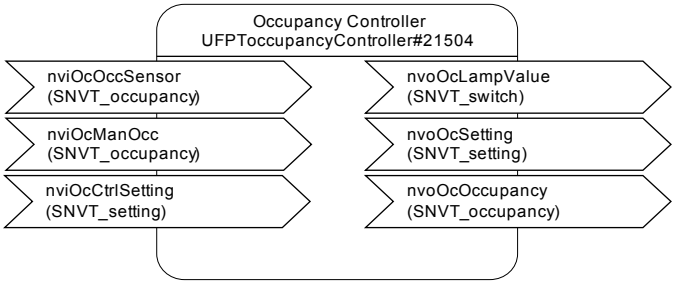
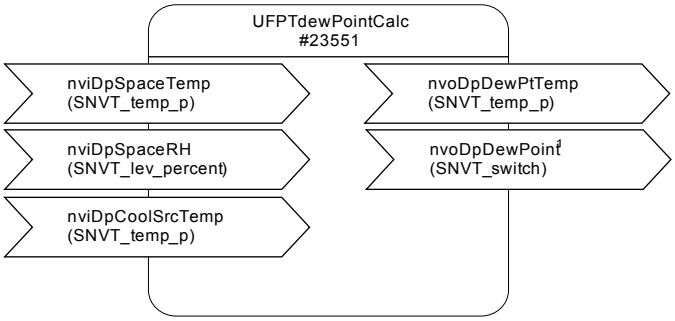
Count	Object	Interface
1	Occupancy Controller UFPT #21504	
1	DewPoint Calculator UFPT#23551	

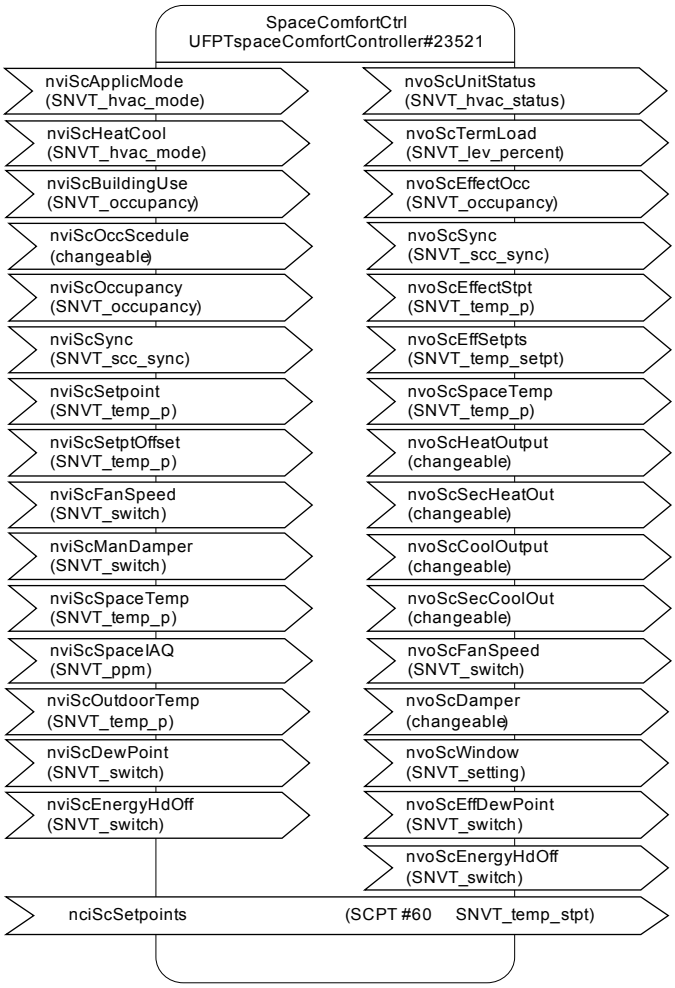
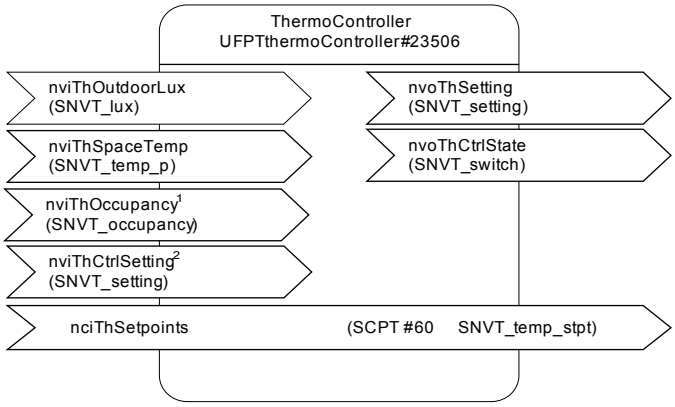
Count	Object	Interface
1	SpaceComfort Controller UFPT #23521	
1	ThermoController UFPT #23506	

Count	Object	Interface
3	HvacActuator UFPT #23401	

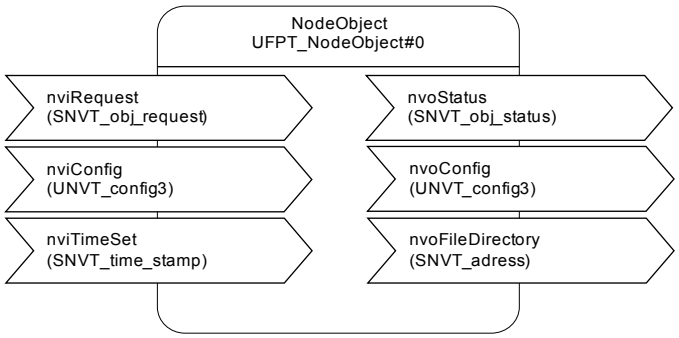
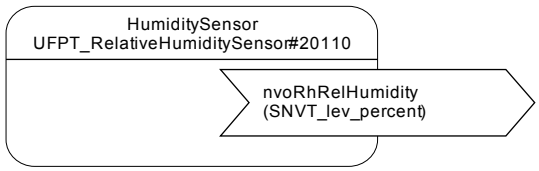
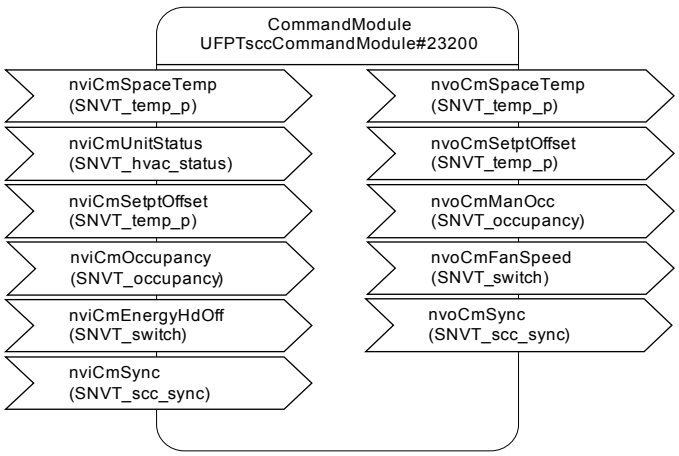
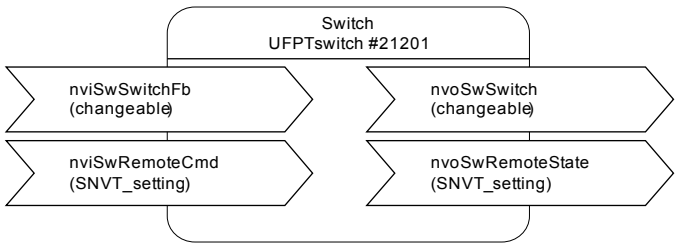
SC341701EC_01

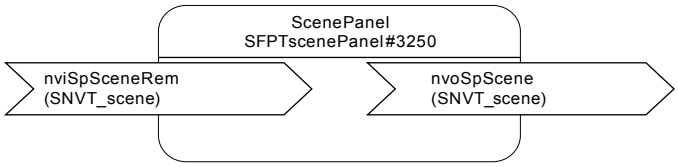
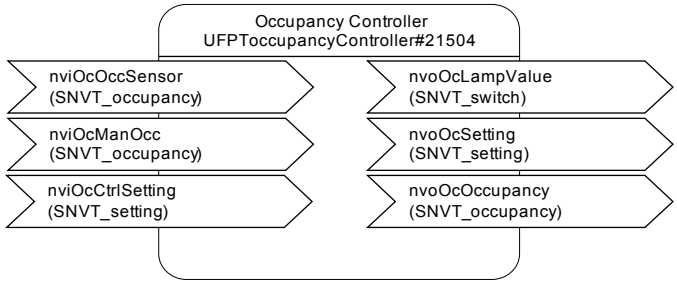
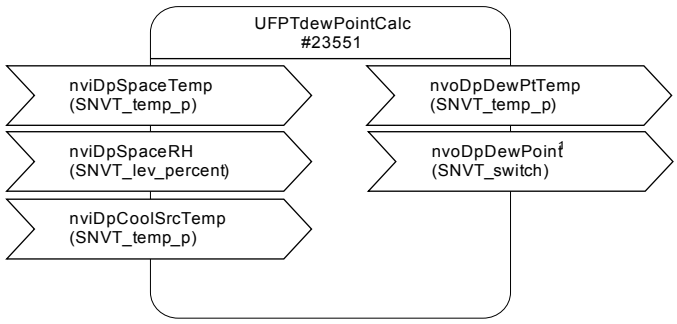
Count	Object	Interface
1	NodeObject UFPT #0	
1	HumiditySensor UFPT #20110	
1	CommandModule UFPT #23200	

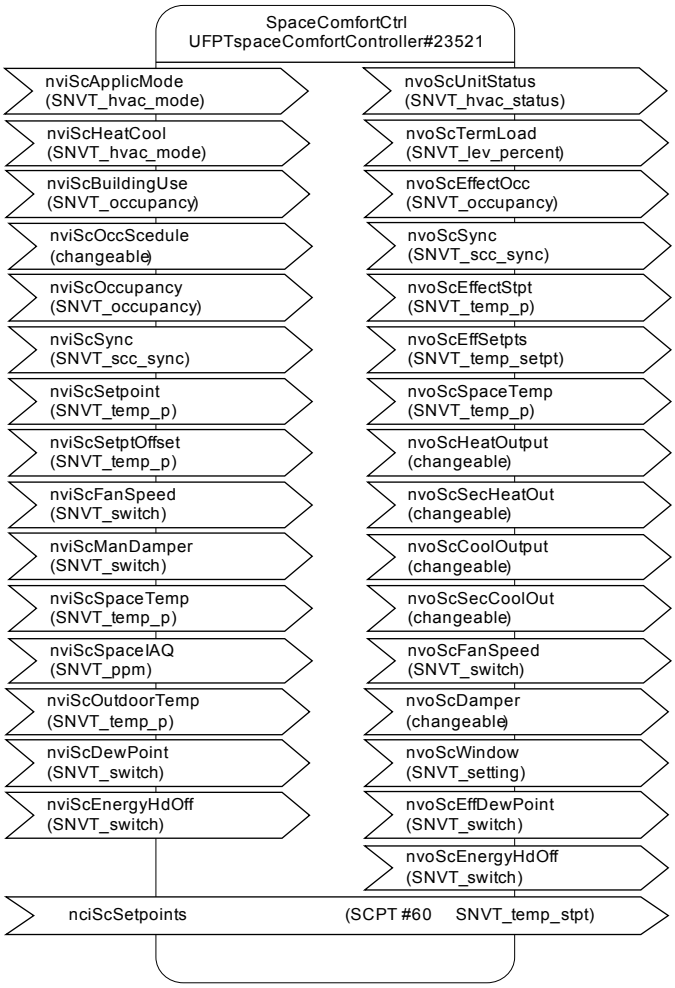
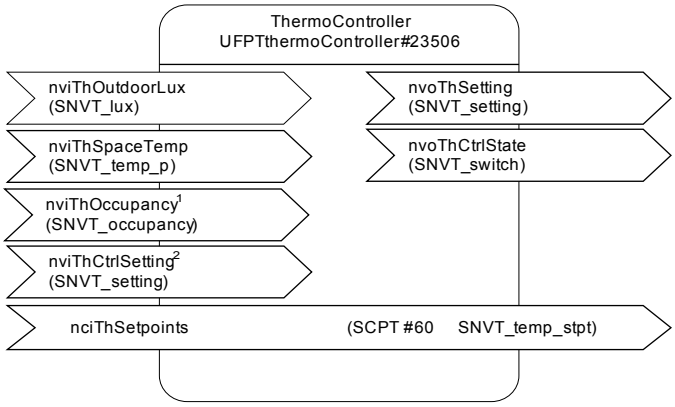
Count	Object	Interface
8	Switch UFPT #21201	
1	ScenePanel UFPT #3250	
1	Occupancy Controller UFPT #21504	
1	DewPoint Calculator UFPT#23551	

Count	Object	Interface
1	SpaceComfort Controller UFPT #23521	
1	ThermoController UFPT #23506	

SC341708EC_01

Count	Object	Interface
1	NodeObject UFPT #0	
1	HumiditySensor UFPT #20110	
1	CommandModule UFPT #23200	
8	Switch UFPT #21201	

Count	Object	Interface
1	ScenePanel UFPT #3250	
1	Occupancy Controller UFPT #21504	
1	DewPoint Calculator UFPT#23551	

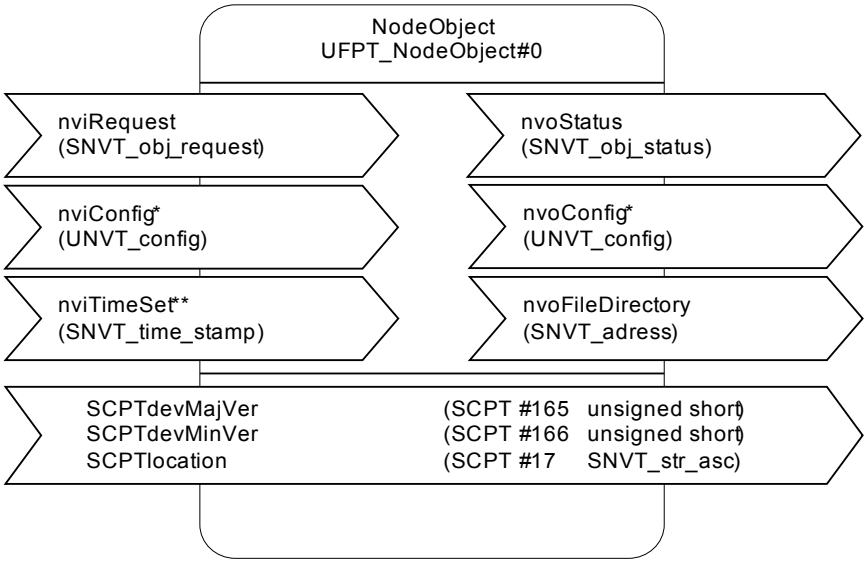
Count	Object	Interface
1	SpaceComfort Controller UFPT #23521	
1	ThermoController UFPT #23506	

1.4. Description of software objects

The individual functional objects are described in greater detail below.

1.4.1 Node object

Network interface



* *not at all room panels available*
** *only at room panels with time- and date display available*

Network variables

Input variables

`nviRequest` Default network input for receiving management commands

Type: SNVT_obj_request
Presetting: {0, RQ_NORMAL}

`nviConfig*` Communication interface for plug-ins

Type: UNVT_config
* *not at all room panels available*

`nviTimeSet**` Default network input for receiving actual date / time (synchronisation)

Type: SNVT_time_stamp
** *only at room panels with time- and date display available*

Output variables

`nvoStatus` Output of status data for received request management commands via *nviRequest*

Type: SNVT_obj_status

Transmission: On request via *nviRequest*

`nvoConfig*` Communication interface for plug-ins

Type: UNVT_config

Transmission: on request via *nviConfig*

* *not at all room panels available*

`nvoFile Directory` Provides the start address of the config file directory of the device

Type: SNVT_address

Transmission: During file transfer or polling

Configuration properties

`SCPTdevMaj Ver` Major version of the application

Type: SCPT #165 (read only) unsigned short

Value: Application specific

`SCPTdevMin Ver` Minor version of the application

Type: SCPT #166 (read only) unsigned short

Value: Application specific

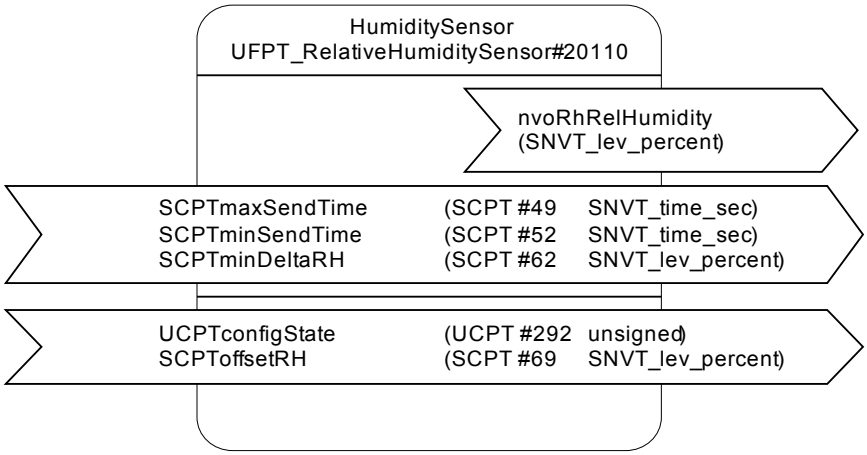
`SCPTlocation` Extended description of the device location

Type: SCPT #17 SNVT_str_asc

Presetting: { 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 }

1.4.2 Measurement of relative humidity

Network interface



Network variables

`nvoRhRel Humidity` Relative Humidity

Type: SNVT_lev_percent (SNVT #81)

Range of values: 0,00 – 100,00%

Presetting: Invalid value {163,835 %}

Transmission: Adjustable via *SCPTmaxSendTime, SCPTminSendTime* and *SCPTminDeltaRH*

Configuration properties

Parametrization of network variables

`SCPTmaxSend Time` Maximum period of time between sending two telegrams

Type: SNVT_time_sec (SCPT #49)

Range of values: 0,0 ... 6553,4 Seconds

Presetting: 0,0 Seconds {0}

`SCPTminSend Time` Minimum transmission interval before re-sending a value

Type: SNVT_time_sec (SCPT #52)

Range of values: 0 No periodic resend
0,5 - 6553,0 Seconds

Presetting: No periodic resend {0}

SCPTminDeltaRH	Minimum of absolute value change causing the value to be re-sent
Type:	SNVT_lev_percent (SCPT #62)
Range of values:	0,00 ... 10,00 %
Presetting:	0% {0}

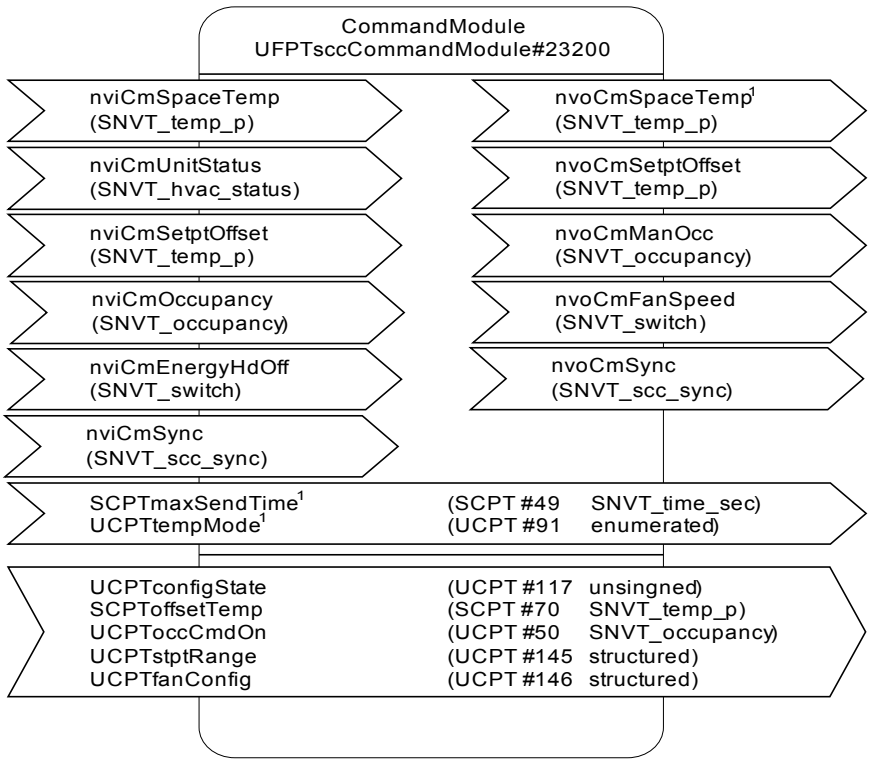
Parametrization of functional object

UCPTconfig State	Only used by Plug-in
Type:	unsigned short
Range of values:	0 - 255
Presetting:	255 {255}

SCPToffsetRH	Measurement offset to calibrate the sensor
Type:	SNVT_lev_percent (SCPT #69)
Range of values:	0,00 – 20,00%
Presetting:	0,00 % {0}

1.4.3 Operating module

Network interface



Network variables

`nviCmSpace Temp` Room temperature to show on display

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nviCm Occupancy` Occupancy feedback for synchronization of toggle buttons and for display

Type: SNVT_occupancy
Range of values: SNVT_occupancy
Presetting: Invalid value {OC_NUL}

`nviCmSetpt Offset` Setpoint offset feedback for syncronization and display

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nviCmUnit Status` Room temperature controller states for syncronization and display

Type: SNVT_hvac_status
Range of values: SNVT_hvac_status
Presetting: Invalid values {HVAC_NUL, 32767, 32767, 32767, 32767, 32767, 255}

`nviCmSync` Feedback from spega SpaceComfortController and synchronization between spega CommandModul objects

Type: UNVT_scc_sync
Range of values: UNVT_scc_sync
Presetting: Invalid values {32767, HVAC_NUL, HVAC_NUL, 32767, 32767, 255, 255, 255, 255, 255, 255, 255, 255, 255}

`nvoCmSpaceTemp` Temperature measurement value

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}
Transmission: via *SCPTmaxSendTime* and *UCPTtempMode*

`nvoCmSetptOffset` Manual setpoint offset

Type: SNVT_temp_p
Range of values: parametrized at *UCPTstptRange*
Presetting: Invalid value {32767}

`nvoCmManOcc` Manual occupancy

Type: SNVT_occupancy
Range of values: *UCPToccCmds.cmd_on* *UCPToccCmds.cmd_off*
Presetting: Invalid value {OC_NUL}

`nvoCmFanSpeed` Manual fan stage

Type: SNVT_switch
Range of values: { *x*, 1} Stage values *x = UCPTfan-Config.level_n*
{ 0.0, -1} Automatic
{127.5, -1} Invalid value
Presetting: Invalid value {0xFF, 0xFF}

`nvoCmSync` control for spega SpaceComfortController and synchronization between spega CommandModul objects

Type: UNVT_scc_sync
Range of values: UNVT_scc_sync
Presetting: Invalid value {32767, HVAC_NUL, HVAC_NUL, 32767, 32767, 255, 255, 255, 255, 255, 255, 255, 255, 255, 255}

Configuration parameters

Parametrization of the network variables

`SCPTmaxSendTime` Maximum period of time between sending two telegrams

Type: SNVT_time_sec (SCPT #49)
Range of values: 0,0 ... 6553,4 Seconds
Presetting: 0,0 Seconds {0}

`UCPTtempMode` use of temperature value, influencing the sending behavior of temperature

Type: enumeration (UCPT #91)
Range of values: 1 TM_AVERAGE for use on average only cyclic sending
2 TM_INTERNAL as simply value send each change and cyclic if needed
255 TM_NUL sensor not used
Presetting: simpel value {2}

Parametrization of the object

`UCPTconfigState` only used by Plug-in

Type: unsigned (UCPT #117)
Range of values: -
Presetting: -

`SCPToffsetTemp` Measurement offset for temperature to calibrate the sensor

Type: SNVT_temp_p (SCPT #70)
Range of values: -5,00°C - +5,00°C
Presetting: 0,00°C

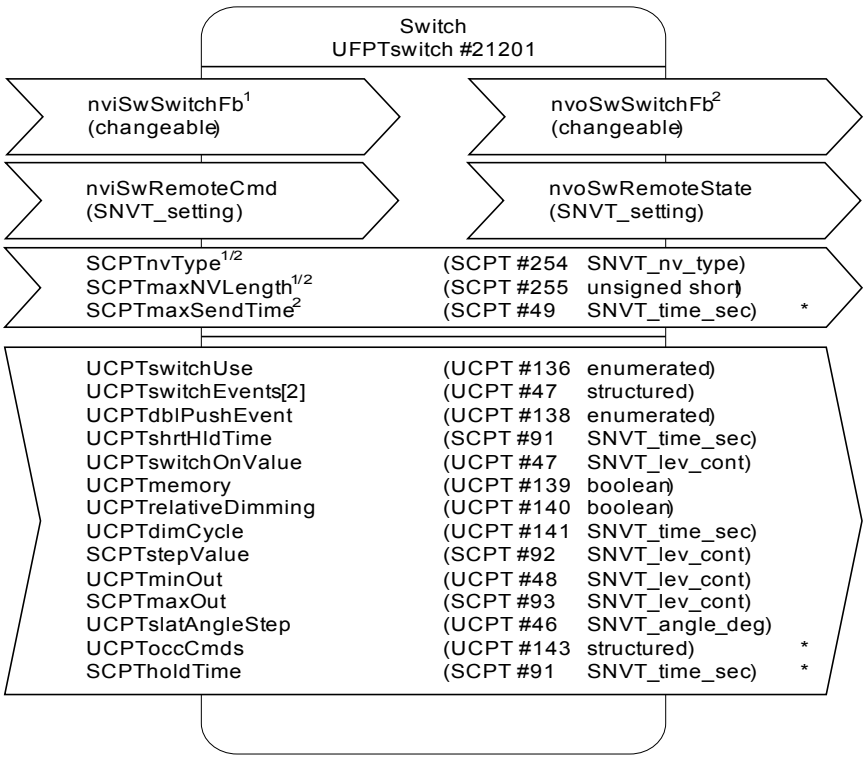
`UCPToccCmdOn`	Occupancy telegram on occupancy
Type:	SNVT_occupancy (UCPT #50)
Range of values:	0 OC_OCCUPIED Room occupied 2 OC_BYPASS Room temporary occupied
Presetting:	Room occupied {0}

`UCPTstptRange`	Range and increment for setpoint adjustment
Type:	structured (UCPT #145)
Range of values:	.min_range -5,00°C – 0,00°C .max_range 0,00°C - +5,00°C .step 0,5 K – 1,0 K
Presetting:	range of -3,00 to +3,00°C with increments of 0,5 K {-300, +300, 50}

`UCPTfanConfig`	Selectable fan stages
Type:	structured (UCPT #146)
Range of values:	.enable_auto 0 FALSE AUTO not used 1 TRUE AUTO selectable .enable_off 0 FALSE OFF not used 1 TRUE OFF selectable .level_1/.level_2/.level_3 0,0% Stage not used 0,5 - 100,0% Used value for the stage
Presetting:	AUTO an OFF selectable and 3 stages {TRUE, TRUE, 33.0%, 66.5%, 100,0%}

1.4.4 Switch

Network interface



Network variables

`nviSwSwitchFb` Feedback input
Type: Changeable
- SNVT_switch
- SNVT_setting

Default type: SNVT_setting
Range of values : Depends on nv type
Presetting: 0/OFF
{SET_OFF, 0.0, 0.00}

`nviSwRemoteCmd` Simulation input
Type: SNVT_setting
Range of values : SNVT_setting
Presetting: 0/OFF
{SET_OFF, 0.0, 0.00}

`nvoSwSwitch` Value output
Type: Changeable
- SNVT_switch
- SNVT_setting
- SNVT_occupancy*

Default type: SNVT_setting
Range of values : Depends on nv type
Presetting: 0/OFF
{SET_OFF, 0.0, 0.00}
Transmission: Adjustable via *SCPTmaxSendTime*

** This NV-typ is only selectable on devices with binary inputs*

`nvoSwRemoteState` Feedback of actual input state
Type: SNVT_setting
Range of values : SNVT_setting
Presetting: 0/OFF
{SET_OFF, 0.0, 0.00}

Configuration properties

Parametrization of network variables

`SCPTmaxNVLength` Maximum length of the network variable (read only)
Type: unsigned short (SCPT #255)
Presetting: 4 Byte {4}

`SCPTnvType` Type of network variable
Type: Structure (SCPT #254)
Range of values : supported NV-types
Presetting: SNVT_setting

`SCPTmaxSendTime` Maximum time between two telegrams
Validity: for *nvoSwSwitch*
Type: SNVT_time_sec (SCPT #48)
Range of values : 0 – 6553,4 Seconds
Presetting: 0 Seconds {0}
** This NV-typ is only selectable on devices with binary inputs*

Parametrization of functional object

`UCPTswitchUse` Only used by plug-in
Type: unsigned short (UCPT #195)

`UCPTdblPushEvent` Event for parallel pressing of both assigned buttons
Type: enumerated
Range of values : see *UCPTswitchEvents*
Presetting: no Event selected {EV_NO_MSG}

`UCPTshrtHldTime` Time limit between short and long hold action
Type: SNVT_time_sec (UCPT #91)
Range of values : 0,1 – 30,0 Seconds
Presetting: 0,5 Seconds

`UCPTswitchOnValue` Switch on value
Type: SNVT_lev_cont (UCPT #47)
Range of values : 0,0 – 100,0 %
Presetting: ON with 100% {100.0}

`SCPTstepValue` value step for dimming / drive
Type: SNVT_lev_cont (SCPT #92)
Range of values : 0,0 – 100,0 %
Presetting: 10% {20}

`UCPTslatAngleStep` angle step for slat turning
Type: SNVT_angle_deg (UCPT #46)
Range of values : -90,00° - +90,00°
Presetting: 10,00° {500}

`UCPTswitchEvents[2]` Events on press, hold and release of button(s)
Type: array of structured
Structure: for each button:
.push short pressing
.hold long pressing
.release release after short pressing
.release_late release after long pressing
Range of values : for each element/action:
-1 EV_NUL
send invalid
0 EV_OFF
switch off
1 EV_ON
switch on
2 EV_DIM_DOWN
dimm down
3 EV_DIM_UP
dimm up
4 EV_STOP
send stop
5 EV_SB_DOWN
drive sunblind down
6 EV_SB_UP
drive sunblind up
7 EV_SLAT_DOWN
turn slat down
8 EV_SLAT_UP
turn slat up
9 EV_TOGGLE
toggle
10 EV_DIM
dimm toggle
11 EV_SB_TOGGLE
drive toggle
14 EV_NO_MSG
send no message
Vorbelegung: send no messages

`UCPTrelativeDimming` decides the usage of relative dimming with NV-type SNVT_setting
Type: boolean

(UCPT #140)
Range of values : 0 BOOL_FALSE
no relative dimming
1 BOOL_TRUE
use relative dimming
Presetting: use relative dimming {BOOL_TRUE}

`UCPTminOut` lower limit for dimming and switching
Type: SNVT_lev_cont (UCPT #48)
Range of values : 0,0 ... 100,0%
Presetting: 0% {0}

`SCPTmaxOut` upper limit for dimming and switching
Type: SNVT_lev_cont (SCPT #93)
Range of values : 0,0 ... 100,0%
Presetting: 100% {200}

`UCPTdimm Cycle` Dimming cycle (Update rate on dimming)
Type: SNVT_time_sec
Range of values : 0,0 No dimming
0,5-.6553,4s Cycle time
Presetting: 0,5 s {5}

`UCPTmemory` decides the usage of memory for last switch on value
Type: boolean (UCPT #139)
Range of values : 0 FALSE
send *UCPTswitchOnValue*
1 TRUE
send memorised switch on value
Presetting: no memory use {0}

`UCPToccCmds*` Switch On and switch of values for NV-type SNVT_occupancy
Type: structured (UCPT #143)
Range of values : *.cmd_on / .cmd_off* SNVT_occupancy
Presetting: 'room occupied' on switch on and 'room unoccupied' on switch of {OC_OCCUPIED, OC_UNOCCUPIED}

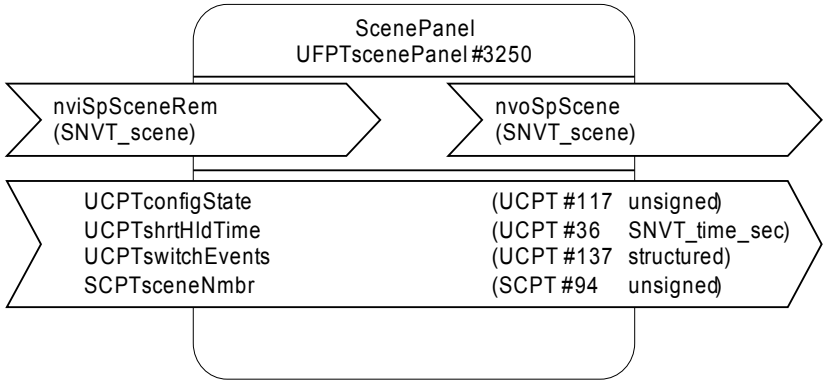
** This parameter is only available on devices with binary inputs*

`SCPTholdTime*` hold time for switch on state of binary input
Type: SNVT_time_sec
Range of values : 0,0 No hold time
0,5-.6553,4s Hold time
Presetting: 0,5 s {5}

** This parameter is only available on devices with binary inputs*

1.4.5 Scene Panel

Network interface



Network variables

`nviSpSceneRem` Scene input for remote scene buttons

Type: SNVT_scene
Range of values: SNVT_scene
Presetting: Invalid scene command {0, 0}

`nvoSpScene` Scene output

Type: SNVT_scene
Range of values: SNVT_scene
Presetting: Invalid scene command {0, 0}

Configuration parameters

`UCPTconfig State` Only used by Plug-in

Type: unsigned short (UCPT #117)
Range of values: 0 - 255
Presetting: 255 {255}

`UCPTshrtHld Time` Time threshold between the short and long hold function of the buttons

Type: SNVT_time_sec (UCPT #36)
Range of values: 0,1 – 30,0 Seconds
Presetting: 0,5 Seconds

`UCPTenable RemoteCtrl` Activation of scene buttons on remote control

Type: boolean {UCPT #103}
Range of values: 0 FALSE Buttons inactive
1 TRUE Buttons active
Presetting: Buttons inactive {0}

`UCPTswitch Events` Actions on push, reaching short hold time and releasing assigned buttons

Type: array of structured (UCPT #137)
Structure: For two buttons
.push Pushing
.hold reaching short hold time
.release Releasing be-for short hold time reached
.release_late Releasing after short hold time reached
Range of values: For each element
12 EV_SCENE_RCL Recall scene
13 EV_SCENE_LRN Learn scene
14 EV_NO_MSG No action
Presetting: No actions

`UCPTsceneToButton` Allocation of scene numbers to scene buttons

Type: structured {UCPT #16}

Range of values: For each element:
0 No valid number
1 – 255 Scene number

Presetting: No valid numbers {0 … 0}

`SCPTsceneNmbr` Scene number of first scene button on remote control

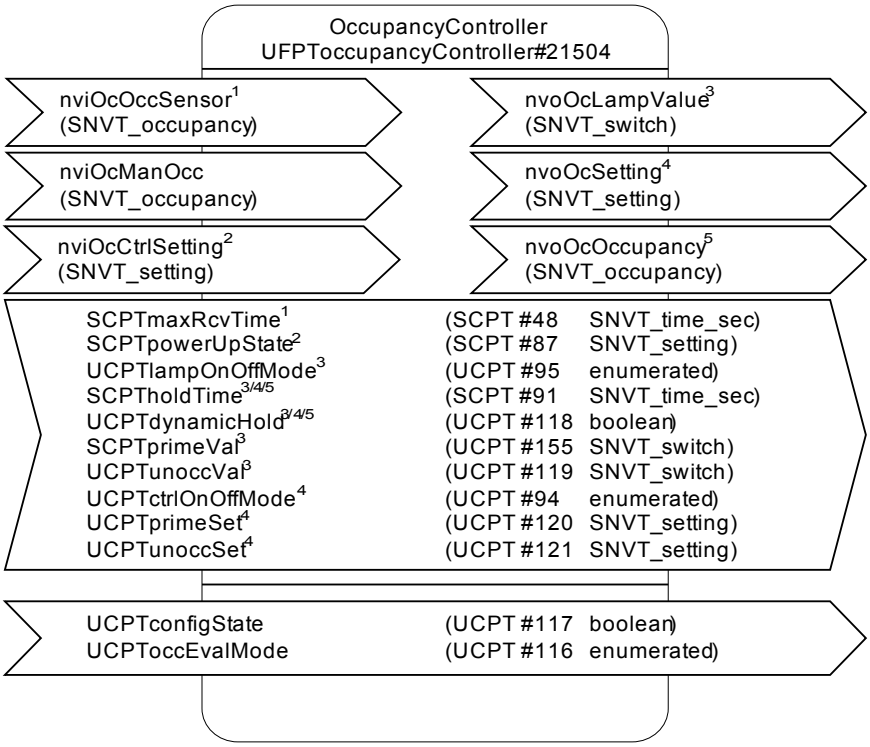
Type: unsigned {SCPT #94}

Range of values: 0 No valid number
1 – 255 Scene number

Presetting: No valid number {0}

1.4.6 Occupancy control

Network interface



Network variables

`nviOcOcc Sensor` Occupancy status of the room (sensor input)

Type: SNVT_occupancy

Range of values:
- 0 OC_OCCUPIED Room occupied
- 1 OC_UNOCCUPIED Room unoccupied

Presetting: Room unoccupied {1}

`nviOcCtrl Setting` Control input of controller

Type: SNVT_setting

Range of values: .setting
- -1 SET_NUL Reset the controller
- 0 SET_OFF Controller off
- 1 SET_ON Controller on

Presetting: *SCPTpowerupState*

`nviOcManOcc` Occupancy status of the room (manual input)

Type: SNVT_occupancy

Range of values:
- -1 OC_NUL Invalid value
- 0 OC_OCCUPIED Room occupied
- 1 OC_UNOCCUPIED Room unoccupied
- 2 OC_BYPASS Room temporary occupied
- 3 OC_STANDBY Room temporary unoccupied

Presetting: Room unoccupied {1}

`nvoOcSetting` output for controller control

Type: SNVT_setting

Range of values:
- *SCPTprimeVal* If room is occupied
- *UCPTunoccVal* If room is unoccupied

`nvoOc Occupancy` Evaluated occupancy

Type: SNVT_occupancy

Range of values:
0 OC_OCCUPIED Room occupied
1 OC_UNOCCUPIED Room unoccupied
2 OC_BYPASS Room temporary occupied
3 OC_STANDBY Room temporary unoccupied

Presetting: Room unoccupied {1}

`nvoOcLamp Value` Switching output for actuator control

Type: SNVT_switch

Range of values:
UCPTprimeSet If room is occupied
UCPTunoccSet If room is unoccupied

Configuration parameters

Parametrization of the network variables

`SCPTmax RcvTime` Duration of validity for 'occupied' telegrams on *nviOcOccSensor*, serves parallel connection of several sensors

Type: SNVT_time_sec (SCPT #48)

Range of values: 0 ... 6553,4 Seconds

Presetting: 0 Seconds {0}

`SCPTpowerup State` Controller status after power restoration

Type: SNVT_setting

Range of values: See *nviOcCtrlSetting*

Presetting: Controller active {SET_ON, 100.0%, 0.00°}

`UCPTlampOn OffMode` Switching behavior of switching output

Type: enumerated {UCPT #95}

Range of values:
0 ONOFF Switch on and off
1 OFFONLY Switch off only

Presetting: Switch on and off {0}

`SCPTholdTime` Delay time before an 'unoccupied' telegram causes switch-off of the network output variable

Type: SNVT_time_sec (SCPT #91)

Range of values: 0 ... 6553,4 Seconds

Presetting: 10 Minutes (6000)

`UCPTdynamic Hold` Dynamic increase of the hold time

Type: boolean {UCPT #118}

Range of values:
0 FALSE No increase
1 TRUE Dynamic increase

Presetting: No increase {0}

`SCPTprimeVal` Value of switching output if room is occupied

Type: SNVT_switch

Range of values: SNVT_switch

Presetting: Switch on {100.0%, 1}

`UCPTunoccVal` Value of switching output if room is unoccupied

Type: SNVT_switch

Range of values: SNVT_switch

Presetting: Switch off {0.0%, 0}

`UCPTctrlOnOff Mode` Switching behavior of control output

Type: enumerated {UCPT #94}

Range of values:
0 ONOFF Switch on and off
1 OFFONLY Switch off only

Presetting: Switch on and off {0}

`UCPTprimeSet` Value of control output if room is occupied

Type: SNVT_setting

Range of values: SNVT_setting

Presetting: Switch on {SET_ON, 100.0%, 0.00°}

`UCPTonoccSet`	Value of control output if room is unoccupied
Type:	SNVT_setting
Range of values:	SNVT_setting
Presetting:	Switch off {SET_OFF, 0.0%, 0.00°}

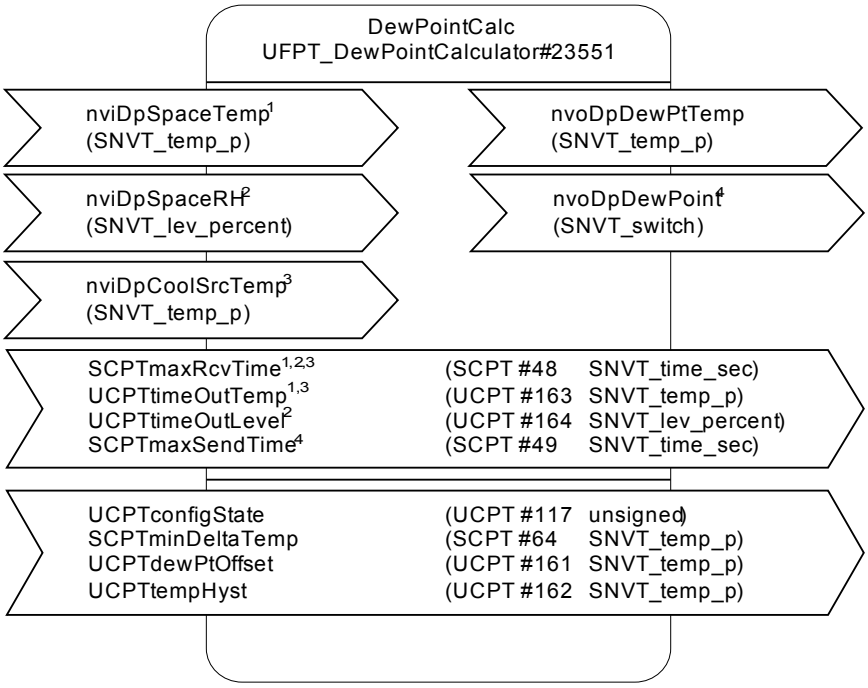
Parametrization of the object

`UCPTconfig State`	only used by Plug-in
Type:	unsigned short (UCPT #195)
Range of values:	-
Presetting:	-

`UCPToccEval Mode`	Reaction for changes on *nviOcOccSensor*
Type:	enumerated {UCPT #116}
Range of values:	0 AUTOONOFF Switch on and off 1 MANON_AUTOOFF Switch off only, switch on only via *nviOcManOcc*
Presetting:	Switch on and off {0}

1.4.7 Dew point calculation

Network interface



Network variables

`nviDpSpaceTemp` Room temperature

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nviDpSpaceRH` Relative humidity

Type: SNVT_lev_percent
Range of values: 0,00% - 100,00%
Presetting: Invalid value {32767}

`nviDpCoolSrcTemp` Temperature of cooling medium

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nvoDpDewPtTemp` Calculated temperature of cooling medium on reaching dew point

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nvoDpDewPoint` Dew point signal output

Type: SNVT_switch
Range of values: {100.0%, 1} Dew point reached
{0.0%, 0} No condensation
Presetting: No condensation {0,0 0}

Configuration parameters

Parametrization of the network variables

`SCPTmaxRcvTime` Maximum time for receiving sensor values to detect sensor absence

Type: SNVT_time_sec {SCPT #48}

Range of values: 0 No detection
1 - 6553 Seconds

Presetting: No detection {0}

`UCPTtimeOutTemp` Value on sensor absence

Type: SNVT_temp_p {UCPT #163}

Range of values: SNVT_temp_p

Presetting: *nviDpSpaceTemp* 35,00°C {3500}
nviDpCoolSrcTemp 5,00°C {500}

`UCPTtimeOutLevel` Value on sensor absence

Type: UNVT_lev_percent {UCPT #164}

Range of values: See *nviDpSpaceRH*

Presetting: 100,0% {20000}

`SCPTmaxSendTime` Maximum period of time between sending two dew point telegrams

Type: SNVT_time_sec {SCPT #49}

Range of values: 0 No periodic re-sent
0,5 - 6553,0 Seconds

Presetting: No periodic resend {0}

Parametrization of the object

`UCPTconfigState` Only used by Plug-in

Type: unsigned short (UCPT #117)

Range of values: 0 - 255

Presetting: -

`SCPTminDeltaTemp` Rounding value for *nvoDpDewPtTemp*

Type: SNVT_temp_p {SCPT #64}

Range of values: 0,00°C – 2,00°C

Presetting: 0,10°C {10}

`UCPTdewPtOffset` Safety distance to calculated dew point temperature

Type: SNVT_temp_p {UCPT #161}

Range of values: -5,00 K – +5,00 K

Presetting: 0 K

`UCPTtempHyst` Switchback hysteresis for dew point signal

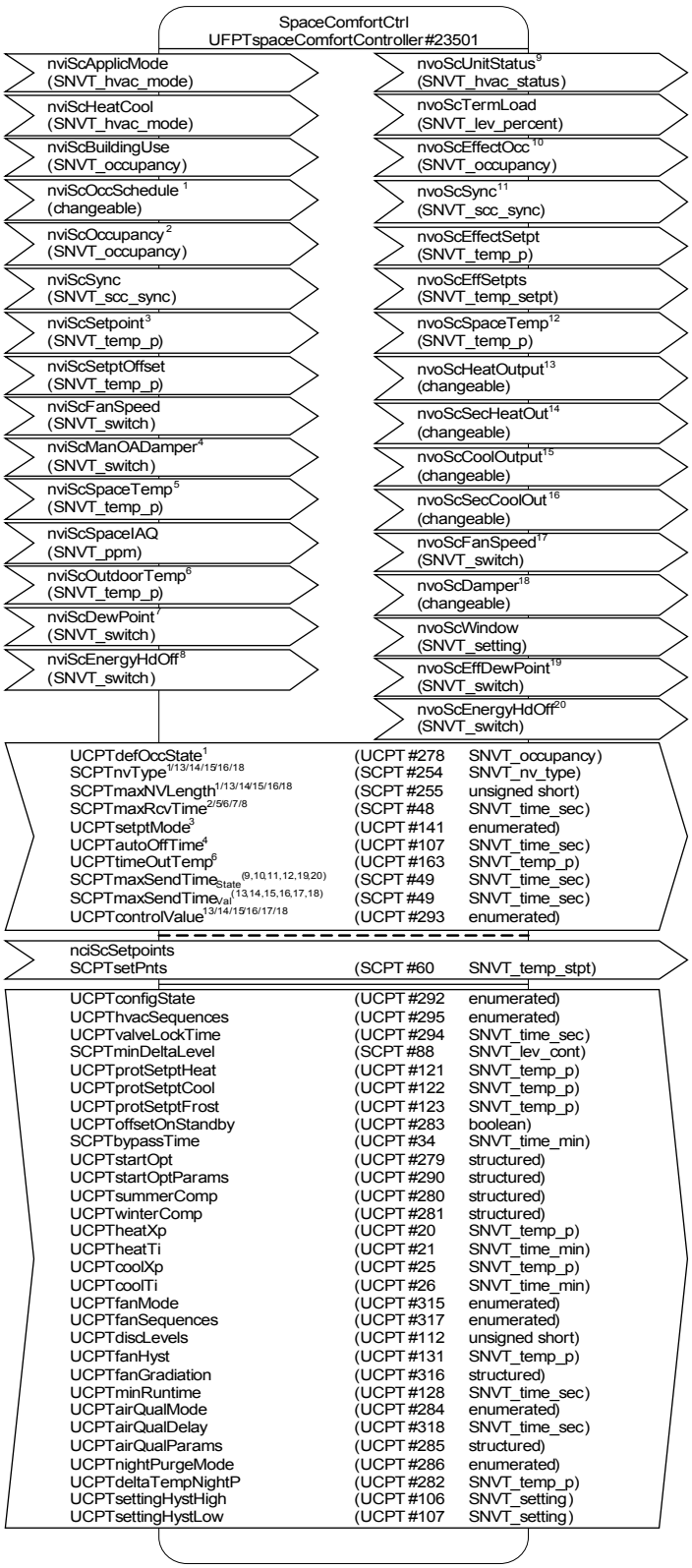
Type: SNVT_temp_p {UCPT #162}

Range of values: 0,20 K – 5,00 K

Presetting: 1,00 K {100}

1.4.8 Space comfort control

Network interface



Network variables

Input network variables

`nviScApplicMode` Central selection of controller function

Type: SNVT_hvac_mode

Range of values:
0 AUTO
Automatic
1 HEAT
Heating
2 MRNG_WRMUP
Quick warm up
3 COOL
Cooling
4 NIGHT_PURGE
Night purge
5 PRE_COOL
Night cooling
6 OFF
switch off
8 EMERG_HEAT
Emergency heating
12 MAX_HEAT
Maximum heating
16 EMERG_COOL
Emergency cooling
17 MAX_COOL
Maximum Cooling

Presetting: Automatic {0},
Last value stored in non-volatile memory

`nviScHeatCool` Local selection of controller function or external change-over signal for 2-pipe-systems

Type: SNVT_hvac_mode

Range of values:
0 AUTO Automatic (not for change-over)
1 HEAT Heating
3 COOL Cooling
6 OFF Switch off

Presetting: Automatic {0}

`nviScBuildingUse` Central default of building use

Type: SNVT_occupancy

Range of values:
0 OC_OCCUPIED
Building in Use
1 OC_UNOCCUPIED
Building protected
3 OC_STANDBY
Building not used

Presetting: Building in use {0}

`nviScOccSchedule` Central room utilization plan

Type: changeable

Default type: SNVT_tod_event

Range of values: *.current_state/.next_state*
0 OC_OCCUPIED
Room occupied
1 OC_UNOCCUPIED
Room unoccupied
3 OC_STANDBY
Room in standby
.time_to_next_state
0 Next change unknown
0 – 65535 Minutes

Presetting: actual utilization see *UCPTdefOccState* and next change unknown {*UCPTdefOccState*,0,0}

`nviScOccupancy` Local room occupancy

Type: SNVT_occupancy

Range of values:
0 OC_OCCUPIED
Room occupied
1 OC_UNOCCUPIED
Room unoccupied
2 OC_BYPASS
Comfort extension
3 OC_STANDBY
Room in standby

Presetting: Room unoccupied {1}

`nviScSetpoint` Central setpoint (absolute or relative)

Type: SNVT_temp_p

Range of values: *Absolute*
15,00°C – 35,00°C
Relative
-10,00 K - +10,00 K

Presetting: *Absolute*
Depending on configured regulation sequenzes (see *UCPThvacSequences*)
HEAT: Comfort setpoint for heating
{*SCPTsetPnts.occupied_heat*}
COOL: Comfort setpoint for cooling
{*SCPTsetPnts.occupied_cool*}
else: Middle of deadband
{*SCPTsetPnts.occupied_heat*+(*SCPTsetPnts.occupied_cool*-*SCPTsetPnts.occupied_heat*)/2}
relativ
0 K {0}

`nviScSync` Control of the Regulator via CommandModul objects
Type: UNVT_scc_sync
Range of values: UNVT_scc_sync
Presetting: {0,0,0,0,0,0,0,0,0,0,0,0,0,0}

`nviScSetpt Offset` Local setpoint adjustment (relative)
Type: SNVT_temp_p
Range of values: 5,00 K - +5,00 K
Presetting: 0,00 K {0}

`nviScFanSpeed` Local fan command
Type: SNVT_switch
Range of values: SNVT_switch
Presetting: Automatic {0.0%, -1}

`nviScMan Damper` Local fresh air command
Type: SNVT_switch
Range of values: SNVT_switch
Presetting: Automatic {0.0%, -1}

`nviScSpace Temp` Room temperature
Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: 20°C {2000}

`nviScSpaceIAQ` Air quality
Type: SNVT_ppm
Range of values: SNVT_ppm
Presetting: 0 ppm {0}

`nviScOutdoor Temp` Outdoor temperature
Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: 1°C higher than the frost alarm limit {UCPTprotStptFrost + 100}

`nviScDewPoint` Dew point signal for chilled ceiling
Type: SNVT_switch
Range of values: *.state*
0 Normal
1 Dew point reached
Presetting: Normal {0.0%, 0}

`nviScEnergyHd Off` Regulation interrupt (e.g. on open windows)
Type: SNVT_switch
Range of values: *.state*
0 No interrupt
1 Regulation interrupt
Presetting: No interrupt {0.0%, 0}

Output network variables

`nvoScUnit Status` Output of all controller manipulated variables
Type: SNVT_hvac_status
Range of values: SNVT_hvac_status
Presetting: {0,0,0,0,0,0,0}

`nvoScTermLoad` Output of current heating and cooling requirement
Type: SNVT_lev_percent
Range of values: -100,00% - 0,00%
Heating requirement
0,00% - 100,00%
Cooling requirement
Presetting: Neither heating nor cooling requirement {0}

`nvoScEffect Setpt` Feedback of current controller setpoint
Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: 0°C {0}

`nvoScEffect Occ` Output of current energy level
Type: SNVT_occupancy
Range of values: -1 OC_NUL
Building protection
0 OC_OCCUPIED
Comfort
1 OC_UNOCCUPIED
Economy
2 OC_BYPASS
Comfort extension
3 OC_STANDBY
Standby
Presetting: Building protection {-1}

`nvoScEff Setpts` Feedback of all current setpoints (for each energy level and regulation sequence)
Type: SNVT_temp_setpt
Range of values: each element SNVT_temp_p
Presetting: each 0°C {0,0,0,0,0,0}

`nvoScFanSpeed` Controller manipulated value for fans
Type: SNVT_switch
Range of values: SNVT_switch
Presetting: 0 % {0}

`nvoScSpace Temp` Feedback of averaged space temperature
Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: 0°C {0}

`nvoScHeat Output` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScSecHeat Out` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScCool Output` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScSecCool Out` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScSync` Output of controller manipulated variables for visualization and synchronization of CommandModul objects
Type: UNVT_scc_sync
Range of values: UNVT_scc_sync
Presetting: {0,0,0,0,0,0,0,0,0,0,0,0,0,0}

`nvoScDamper` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScWindow` Controller manipulated value for controllable windows
Type: SNVT_setting
Range of values: *UCPTsettingHystHigh* Open command
UCPTsettingHystLow Close command
Presetting: 0 % {0,0, 0}

`nvoScEffDew Point` Feedback of current dew point informations (OR-function over all sources)
Type: SNVT_switch
Range of values: see *nviScDewPoint*
Presetting: 0 % {0, 0}

`nvoScEnergyHd Off` Feedback of current regulation interrupts (OR-function over all sources)
Type: SNVT_switch
Range of values: see *nviScEnergyHdOff*
Presetting: 0 % {0, 0}

Configuration parameters

Parametrization of the network variables

`UCPTtimeOut Temp` Value for the temperature on missing telegrams
Type: SNVT_temp_p (UCPT #163)
Range of values: SNVT_temp_p
Presetting: -1°C {-100}

`UCPTdefOcc State` Value for room utilization after Reset
Type: SNVT_occupancy
Range of values: see nviScOccupancy
Presetting: Room unoccupied {1}

`SCPTmax NVLength` Maximum length of the network variable (constant)
Type: unsigned short (SCPT #255)
Presetting: *nviScOccSchedule:* *4 Byte {4}* *Value output variables:* *2 Byte {2}*

`SCPTnvType` Type of the network variable
Type: Structured (SCPT #254)
Range of values: Supported NV-types
Presetting: *nviScOccSchedule:* SNVT_tod_event {0,0,0,0,0,0,0,0,0,128, NVT_CAT_REFERENCE,4 ,0,0,0} *Value output variables:* SNVT_lev_percent {0,0,0,0,0,0,0,0,0,81, NVT_CAT_REFERENCE,2 , 5L, -3L, 0L}

`SCPTmaxSend Time (States)` Maximum period of time between sending two telegrams on one of the status outputs
Type: SNVT_time_sec (SCPT #49)
Validity: One shared time for:
- *nvoScUnitStatus*
- *nvoScEffectOcc*
- *nvoScSync*
- *nvoScSpaceTemp*
- *nvoScEffDewPoint*
- *nvoScEnergyHdOff*

Range of values: 0 No periodic resend
1 - 6553 Seconds
Presetting: No periodic resend {0}

`SCPTmaxSend Time (Values)` Maximum period of time between sending two telegrams on one of the value outputs
Type: SNVT_time_sec (SCPT #49)
Validity: One shared time for:
- *nvoScHeatOutput*
- *nvoScSecHeatOut*
- *nvoScCoolOutput*
- *nvoScSecCoolOut*
- *nvoScFanSpeed*
- *nvoScDamper*

Range of values: 0 No periodic resend
1 - 6553 Seconds
Presetting: no periodic resend {0}

`UCPTautoOff Time` Period of validity for local fresh air requests until return to automatic
Type: SNVT_time_sec (UCPT #107)
Range of values: 0 No automatic return
>0 Seconds until return
Presetting: No automatic return {0}

`UCPTcontrol Value` Selection of the meaning for the value outputs
Type: enumerated (UCPT #293)
Range of values:
0 OFF
No meaning / not used
1 HEAT
Heating sequence
2 COOL
Cooling sequence
3 HEAT_COOL
Heating/Cooling sequence
4 HEAT_COOL_SIG
Heating/Cooling sequence for 6-way-valves
5 HEAT_LOCK
Sperrventil Heizsequenz
6 COOL_LOCK
Sperrventil Kühlsequenz
7 CHANGEOVER _HEAT_COOL
Valve to change from heating to cooling
8 CHANGEOVER _COOL_HEAT
Valve to change from cooling to heating
9 IAQ
Air quality
10 HEAT_IAQ
Heating sequence & air quality
11 COOL_IAQ
Cooling sequence & air quality
12 HEAT_COOL_IAQ
Heating/Cooling sequence & air quality
13 FAN
Ventilator
14 OAD
Outdoor air damper
15 OAD_IAQ
Outdoor air damper & air quality
16 CHANGEOVER_SIG
6-way valve for changeover between cooling & heating
Presetting: Not used {0}

`UCPTsetptMode` meaning of values on *nviScSetpoint*
Type: enumerated (UCPT #141)
Range of values: 0 RELATIVE relative values
1 ABSOLUTE absolute values
Presetting: absolute values {1}

SCPTmax RcvTime	Validity duration of telegrams received on the network variables, for *nviScSpaceTemp*, *nviScOccupancy*, *nviScEnergyHdOff* and *nviScDewPoint*: to collect values from more than one source, for *nviScOutdoorTemp* detect missing telegrams
Type:	SNVT_time_sec (SCPT #48)
Range of values:	0 ... 6553 seconds
Presetting:	0 seconds {0}

Parametrization of the functional object

SCPTsetPnts	Central setpoints for each energy level and regulation sequence, changeable via *nciSetpoints*
Type:	SNVT_temp_setpt (SCPT #60)
Range of values:	each element 10,00°C – 40,00°C
Presetting:	Comfort cooling stpt 23°C Standby cooling stpt 25°C Economy cooling stpt 28°C Comfort heating stpt 21°C Standby heating stpt 19°C Economy heating stpt 16°C {2300, 2500, 2800, 2100, 1900, 1600}

UCPTconfig State	only used by Plug-in
Type:	unsigned short (UCPT #195)
Range of values:	0 - 255
Presetting:	255 {255}

SCPTminDelta Level	Minimum of absolute value change causing the value to be re-sent
Type:	SNVT_lev_cont (SCPT #88)
Range of values:	0,00% - 20,00 %
Presetting:	0,05% {10}

UCPTprotSetpt Heat	Heating setpoint for building protection
Type:	SNVT_temp_p (UCPT #121)
Range of values:	0,00°C – 50,00°C
Presetting:	12,00°C {1200}

UCPThvac Sequences	Selection of sequences to be regulated
Type:	enumerated (UCPT #295)
Range of values:	-1 NUL No regulation 0 HEAT Heating sequence 1 COOL Cooling sequence 2 HC_AUTO Heating & cooling sequence with automatic change over 3 HC_EXT Heating & cooling sequence with external change over
Presetting:	No regulation {-1}

UCPTvalveLock Time	valve off-time on sequence change
Type:	SNVT_time_sec (UCPT #294)
Range of values:	0 No off-time 0,5 – 900,0 Seconds off-time
Presetting:	no off-time {0}

UCPTprotSetpt Cool	Cooling setpoint for building protection
Type:	SNVT_temp_p (UCPT #122)
Range of values:	0,00°C – 50,00°C
Presetting:	40,00°C {4000}

UCPTprotSetpt Frost	Temperature limit for activation of frost alarm
Type:	SNVT_temp_p (UCPT #123)
Range of values:	0,00°C – 50,00°C
Presetting:	6,00°C {600}

`UCPToffsetOn Standby` Determine the use of the local setpoint adjustment on standby

Type: boolean (UCPT #283)

Range of values:
0 FALSE Use for both sequences
1 TRUE Used only for the sequence, where it make sens in energetic aspect

Presetting: Use for both sequences {0}

`SCPTbypass Time` Duration of comfort extension

Type: SNVT_time_min (SCPT #34)

Range of values:
0 no extension
1 - 600 Minutes

Presetting: No comfort extension {0}

`UCPTstartOpt` Configuration of the start optimization

Type: structured (UCPT #279)

Range of values:
.mode
0 AUTO For heating and cooling sequence
1 HEAT For heating sequence only
3 COOL For cooling sequence only
6 OFF No start optimization
.max_time
5 - 360 Minutes
.heat_weekend_ext
0,0% - 100,0%
.learn_enable
0 FALSE No self learning
1 TRUE Self learning

Presetting: No start optimization {6, 120, 60, 1}

`UCPTstartOpt Params` Current used parameters of start optimization (adapted by self learning if active)

Type: structured (UCPT #290)

Range of values: for each element
0 - 2000 Minutes

Presetting: {30, 10, 30, 10}

`UCPTsummer Comp` Parameters of summer compensation

Type: structured (UCPT #280)

Range of values:
.min_temp / .max_temp
20,00°C – 50,00°C
.max_offset
0,00 K No summer compensation
>0,00 K Maximum setpoint increase

Presetting: No summer compensation {2600, 3200, 0}

`UCPTwinter Comp` Parameters of winter compensation

Type: structured (UCPT #281)

Range of values:
.min_temp / .max_temp
-20,00°C – 10,00°C
.max_offset
0,00 K No winter compensation
>0,00 K Maximum setpoint increase

Presetting: No winter compensation {0, -1000, 0}

`UCPTheatXp` Proportional band for heating sequence (PI-regulation) or hysteresis width (2-point-regulation)

Type: SNVT_temp_p (UCPT #20)

Range of values: 0,50 K – 10,00 K

Presetting: 2,00 K {200}

`UCPTheatTi` Integral time for heating sequences (PI-regulation)

Type: SNVT_time_min (UCPT #21)

Range of values:
0 2-Point-regulation
1 – 360 Minutes

Presetting: 30 Minutes {30}

`UCPTcoolXp` Proportional band for cooling sequence (PI-regulation) or hysteresis width (2-point-regulation)

Type: SNVT_temp_p (UCPT #25)

Range of values: 0,50 K – 10,00 K

Presetting: 2,00 K {200}

`UCPTcoolTi` Integral time for cooling sequence (PI-regulation)

Type: SNVT_time_min (UCPT #26)

Range of values: 0 2-Point-regulation
1 – 360 Minutes

Presetting: 30 Minutes {30}

`UCPTfanMode` Selection of fan control

Type: enumerated (UCPT #315)

Range of values: 0 OFF
No fan regulation
1 SPACE_TEMP
Temperature depended regulation
2 VALVE_POS
Valve position depended regulation

Presetting: Temperature depending fan regulation {1}

`UCPTfan Sequences` Selection of regulation sequences for fan control

Type: enumerated (UCPT #317)

Range of values: 0 HEAT Heating sequence
1 COOL Cooling sequence
2 HEAT_COOL Heating & cooling sequence

Presetting: Heating & cooling sequence {2}

`UCPTdisc Levels` Fan stage count

Type: unsigned short (UCPT #112)

Range of values: 0 continuous fan
1 – 3 stage count

Presetting: Fan with 3 stages {3}

`UCPTfanHyst` Hysteresis steps for temperature depended fan regulation

Type: SNVT_temp_p (UCPT #131)

Range of values: 0,50 K – 4,00 K

Presetting: 0,50 K {50}

`UCPTfan Gradiation` Lower limits of fan stages and there hysteresis width for valve position depended fan regulation

Type: structured (UCPT #316)

Range of values: *.stage1 / .stage2 / .stage3*
0,0% – 100,0%
.hyst
0,5% - 20,0%

Presetting: Stage 1 starting with 5,0%,
Stage 2 starting with 33,0%
Stage 3 starting with 66,5%
Hysteresis width 5,0%
{10, 66, 133, 10}

`UCPTmin Runtime` Minimum runtime per stage before stage change

Type: SNVT_time_sec (UCPT #128)

Range of values: 0 No minimum runtime
1 - 3600 Seconds

Presetting: No minimum runtime {0}

`UCPTairQual Mode` Selection of air quality control

Type: enumerated (UCPT #284)

Range of values: 0 OFF No air quality control
1 OCC occupancy depended air quality control
2 IAQ continuous air quality control

Presetting: occupancy depended air quality control {1}

`UCPTairQual Delay` Follow-up time for air quality control after the room occupation changes to unoccupied

Type: SNVT_time_sec (UCPT #318)

Range of values: 0 No follow-up time
1 – 6553 Seconds

Presetting: No follow-up time {0}

`UCPTairQual Params` Air quality limits and position range for air quality control

Type: structured (UCPT #285)

Range of values: *.v_min* / *.v_max*
0,0% - 100,0%
with: *.v_min* < *.v_max*
.co2_limit / *.co2_max*
100 ppm – 2000 ppm
with *.co2_limit* < *.co2_max*

Presetting: Minimum position 20%
Maximum position 100%
Lower limit 600 ppm
higher limit 1000 ppm
{40, 200,600, 1000}}

`UCPTnight PurgeMode` Selection of actuators used for night purge

Type: enumerated (UCPT #286)

Range of values:
0 OFF
No night purge
1 DAMPER
via central air condition
2 DAMPER_FAN
via fancoil with outdoor air damper
3 WINDOW
via window

Presetting: No night purge {0}

`UCPTdelta TempNight` Minimum temperature difference of outdoor air temp for night purge via outdoor air

Type: SNVT_temp_p (UCPT #282)

Range of values: 0,50 K – 10,00 K

Presetting: 2,00 K {200}

`UCPTsetting HystHigh` Open command for window

Type: SNVT_setting (UCPT #106)

Range of values: SNVT_setting

Presetting: open
{SET_DOWN, 100.0, 0.00}

`UCPTsetting HystLow` Close command for window

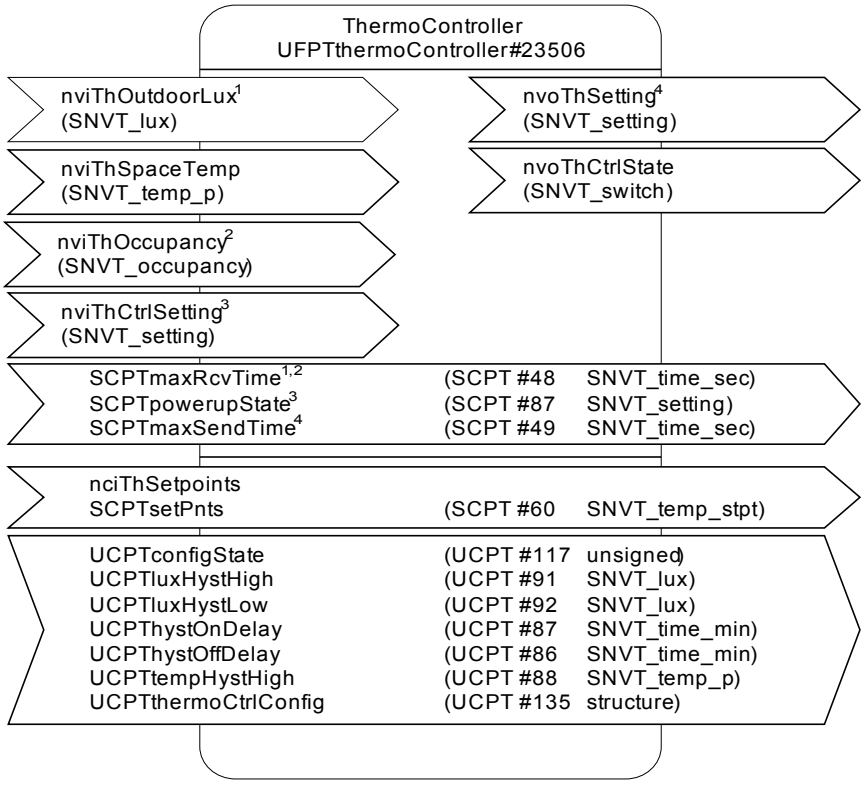
Type: SNVT_setting (UCPT #107)

Range of values: SNVT_setting

Presetting: close
{SET_UP, 100.0, 0.00}

1.4.9 Thermal control

Network interface



Network variables

`nviThOutdoorLux` Outdoor brightness

Type: SNVT_lux
Range of values: 0 – 65535 lux
Presetting: 0 lux

`nviThSpaceTemp` Room temperature

Type: SNVT_temp_p
Range of values: 0,00°C – 60,00°C
Presetting: 20,00°C {2000}

`nviThCtrlSetting` Control input for activation and deactivation of the controller

Type: SNVT_setting
Range of values: *.state*
-1 SET_NUL Automatic
0 SET_OFF Deactivation
1 SET_ON Activation
Presetting: *SCPTpowerupState*

`nviThOccupancy` Actual room occupancy

Type: SNVT_occupancy
Range of values: 0 OC_OCCUPIED Room occupied
1 OC_UNOCCUPIED Room unoccupied
2 OC_BYPASS Comfort extension
3 OC_STANDBY Room in standby
Presetting: Room unoccupied {1}

`nvoThCtrlState` Feedback of controller activity

Type: SNVT_switch
Range of values: { 0, 0} Thermal control inactive
{200, 1} Thermal control active
Presetting: Inactive {0, 0}

`nvoThSetting` Sunblind operating commands to support heating/cooling

Type: SNVT_setting

Range of values: {SET_NUL, 0.0, 0.00}
No valid command/ priority reset
And values from *UCPTthermoCtrlConfig*

Presetting: No valid command {SET_NUL, 0.0, 0.00}

Configuration parameters

Parametrization of the network variables

`SCPTmax RcvTime` Maximum time for receiving sensor values on *nviThOccupancy,* used to combine telegramms from different sources with an OR-function

Type: SNVT_time_sec (SCPT #48)

Range of values: 0 – 6553 Seconds

Presetting: 0 Seconds {0}

`SCPTmaxSend Time` Maximum period of time between sending two telegrams on *nvoThSetting*

Type: SNVT_time_sec (SCPT #49)

Range of values: 0 No periodic re-sent
1 - 6553 Seconds

Presetting: No periodic re-sent {0}

`SCPTpowerUp State` Status of the controller after power restoration

Type: SNVT_setting

Range of values: See *nviThCtrlSetting*

Presetting: Automatic {SET_NUL, 0.0, 0.00}

Parametrization of the object

`UCPTconfig State` Only used by Plug-in

Type: unsigned short (UCPT #195)

Range of values: 0 - 255

Presetting: 255 {255}

`SCPTsetPnts` Setpoints for heat/cool support,
can be changed via *nciThSetpoints*

Type: SNVT_temp_setpt

Range of values: Only .occupied_x relevant, each element:
0,00°C – 50,00°C

Presetting: Comfort cool setpoint 23°C
Comfort heat setpoint 21°C
{2300, 0, 0, 2100, 0, 0}

`UCPTluxHyst High` Activation treshold value of light intensity

Type: SNVT_lux

Range of values: 0 - 65535 lux

Presetting: 20000 lux {20000}

`UCPTluxHyst Low` Deactivation treshold value of light intensity

Type: SNVT_lux

Range of values: 0 - 65535 lux

Presetting: 5000 lux {5000}

`UCPThystOn Delay` Delay on activation

Type: SNVT_time_min

Range of values: 0 - 360 Minutes

Presetting: 10 Minutes {10}

`UCPThystOff Delay` Delay on deactivation

Type: SNVT_time_min
Range of values: 0 - 360 Minutes
Presetting: 20 Minutes {20}

`UCPTtempHyst High` Temperature hysteresis

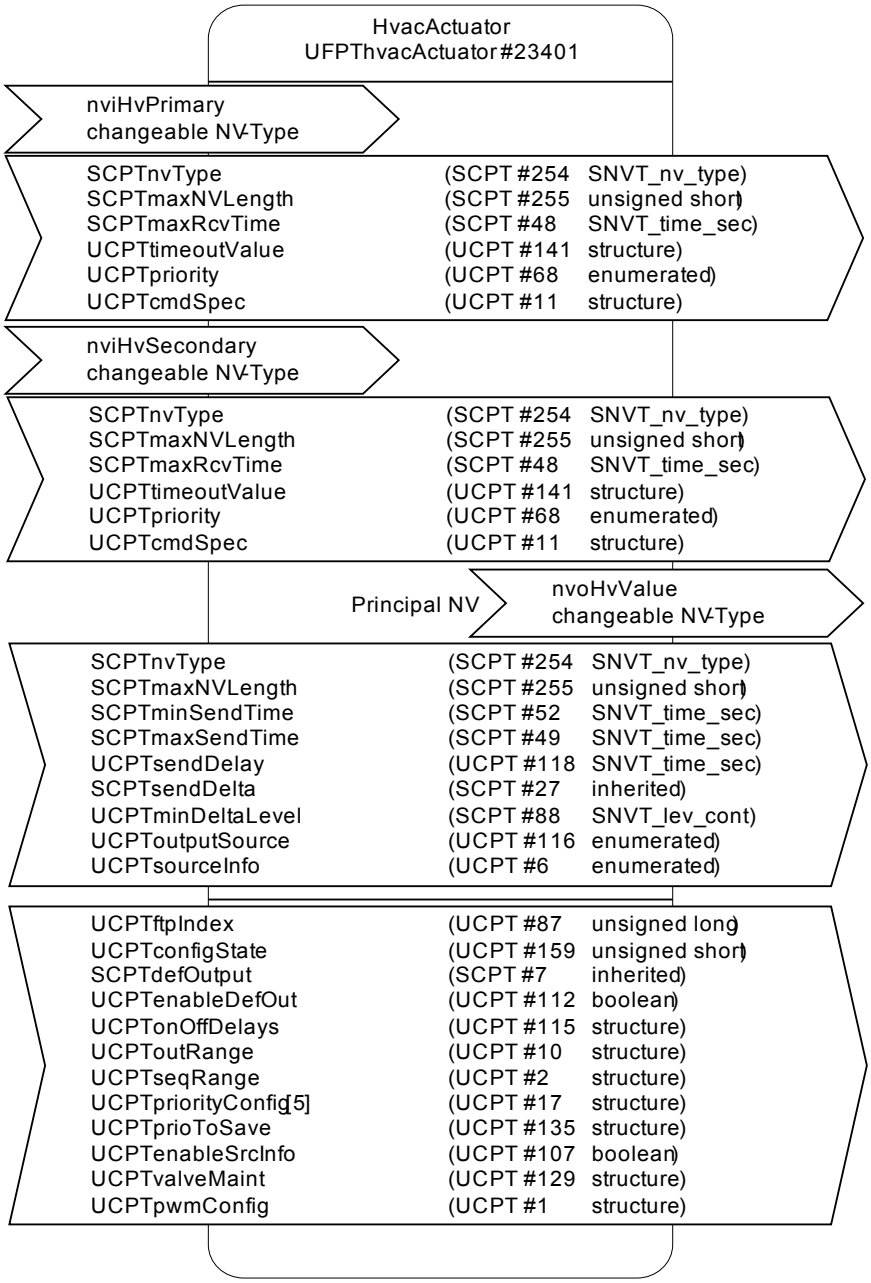
Type: SNVT_temp_p
Range of values: 0,5 K - 5,00 K
Presetting: 1 K {100}

`UCPTthermo CtrlConfig` Sunblind operating commands

Type: structured
Range of values: Each element: SNVT_setting
Presetting: Top end position for heat support, bottom end position with closed slat for cool support and priority reset on deactivation {{SET_STATE,0,0}, {SET_STATE,200,-2250}, {SET_NUL,0,0}}

1.4.10 HVAC actuator

Network interface



Network variables

`nviHvPrimary` Primary value input

Type: Changeable
Type presetting: SNVT_lev_percent
Range of values: Depends on nv-type
Presetting: 0/OFF {0.00}
Heartbeat control: Adjustable via *SCPTmaxRcvTime*

`nviHv Secondary` Secondary value input

Type: Changeable
Type presetting: SNVT_lev_percent
Range of values: Depends on nv-type
Presetting: 0/OFF {0.00}
Heartbeat control: Adjustable via *SCPTmaxRcvTime*

`nvoHvValue` Feedback output of the actuator, Principal NV (the selected type will be used for some configuration parameters)

Type: Changeable
Type presetting: SNVT_lev_percent
Range of values: Depends on nv-type
Presetting: Depends on nv-type
Transmission: Adjustable via *SCPTminSendTime*, *SCPTmaxSendTime,* *SCPTminDeltaLvl*, *SCPTsndDelta*

Configuration properties

Parametrization of network variables

`SCPTnvType` Type definition of the network variable

Type: Structure (SCPT #254)
Range of values: Supported nv types
Presetting: SNVT_lev_percent {0,0,0,0,0,0,0,0,81, NVT_SIGNED_LONG,2, 5L,-3L,0L}

`SCPTmax NVLength` Maximum length of the network variable (read only)

Type: unsigned short (SCPT #255)
Presetting: 2 Byte {2}

Parametrization of input variables

`SCPTmax RcvTime` Maximum receive time for messages

Type: SNVT_time_sec (SCPT #48)
Range of values: 0,0 ... 6553,5 Seconds
Presetting: 0 Seconds {0}

`UCPTtimeout Value` Command for transmission failure

Type: Length of 4 Byte, formated as actual NV-type of *nviHvValue* (UCPT #141)
Range of values: Depends on nv-type
Presetting: Depends on nv-type

`UCPTpriority` Priority / function of value input NVs

Type: enumerated (UCPT #68)
Range of values:

-1	NUL	Invalid value
0	AUTO	Automatic
1	MAN	Manual control
2	OVR1	Override 1
3	WEATHER	Weather protection
5	OVRD2	Override 2
6	SAFETY	Safety

Presetting: Depends on object type

`UCPTcmdSpec` type of control on value input NVs

Type: structure (UCPT #11)

Structure:
```
typedef struct{
    unsigned  cmd_use   :4
    unsigned  cmd_index :4
}
```

Range of values:
.cmd_use
0 DIRECT Direct value
1 LOCK Lock command
2 RELEASE Release kommando
.cmd_index
entry index of device parameter *UCPTcmdTable*, where the command for locking is defined (only for CMDU_LOCK, CMDU_RELEASE)

Presetting: {0 0}

Parametrization of output variables

`SCPTmin SendTime` Minimum time between two telegrams

Type: SNVT_time_sec (SCPT #52)

Range of values: 0,0 ... 6553,5 Seconds

Presetting: 0,1 Seconds {1}

`SCPTmax SendTime` Maximum time between two telegrams

Type: SNVT_time_sec (SCPT #49)

Range of values: 0,0 ... 6553,5 Seconds

Presetting: 0,0 Seconds {0}

`UCPTsendDelay` Sending delay

Type: SNVT_time_sec (UCPT #118)

Range of values: 0,0 ... 6553,5 Seconds

Presetting: 0,0 Seconds {0}

`SCPTminDelta Lvl` Relative minimum change on value

Type: SNVT_lev_percent (SCPT #88)

Range of values: 0,0% … 100,0%

Presetting: 0,0% {0}

`UCPToutput Source` Data source for values on *nvoHvValue*

Type: enumerated (UCPT #116)

Range of values:
-1 NUL
no output
0 FB_STATE
value from hardware
1 NET_PRIO
NV telegram after processed by priority control
2 OUT_STATE
control value after processed by object
3 NET_CMD
all nv telegrams

Presetting: Depends on object type

`SCPTsndDelta` Absolute minimum change on value

Type: inherited (SCPT #27)

Range of values: Depends on nv-type

Presetting: Depends on nv-type

`UCPTsourceInfo` for future use

Type: enumerated (UCPT #6)

Presetting: invalid (-1)

Parametrization of functional object

`UCPTftpIndex` Index of the used functional profile (constant)

Type: unsigned long (UCPT #87)

Value: 23400 HvacActuator

`UCPTconfig State` Only used by Plug-in

Type: unsigned short (UCPT #195)

`SCPTdefOutput` Control value / movement command on voltage recovery (Execution depends on active priority and the setting of *UCPTenableDefOutput*)

Type: inherited (SCPT #7)

Range of values: Depends on nv-type

Presetting: Depends on nv-type

`UCPTenable DefOutput` Determines if *SCPTdefOutput* is valid

Type: boolean (UCPT #112)

Range of values: FALSE *SCPTdefOutput* is invalid
TRUE *SCPTdefOutput* is valid

Presetting: invalid {FALSE}

`UCPTonOff Delays` Delay settings

Type: structure (UCPT #115)

Structure:
```
typedef struct{
  SNVT_time_sec on_delay;
  SNVT_time_sec off_delay;
  unsigned  use_on_auto :1;
  unsigned  use_on_man :1;
  unsigned  use_on_ovrd1 :1;
  unsigned  use_on_weather :1;
  unsigned  use_on_ovrd2 :1;
  unsigned  use_on_safety :1;
}
```

Range of values: *.on_delay / .off_delay*
0,0 ... 6553,5 Seconds
*.use_on_** 0
no delays 1
delays used for this priority

Presetting: no delays for all priorities {0 0 0 0 0 0 0 0}

`UCPTseqRange` Valid input value range (sequence control)

Type: structure (UCPT #2)

Structure:
```
typedef struct{
  SNVT_lev_percent min_range;
  SNVT_lev_percent max_range;
  unsigned use_on_auto :1;
  unsigned  use_on_man :1;
  unsigned  use_on_ovrd1 :1;
  unsigned  use_on_weather :1;
  unsigned  use_on_ovrd2 :1;
  unsigned  use_on_safety :1;
}
```

Range of values: *.min_range / .max_range*
-100,00% … 100,00%
*.use_on_**
0 No sequence control
1 Use min_range and max_range

Presetting: No sequence control {0 20000 0 0 0 0 0 0}

`UCPTpriority Config` Priority configuration (do this via object plug-in)

Type: structure (UCPT #17)

Structure:
```
typedef struct{
  unsigned  return_cmd :4;
  unsigned  get_back_cmd :4;
  unsigned  return_behave :2;
  unsigned  g_b_f_man :1;
  unsigned  g_b_f_ovrd1 :1;
  unsigned  g_b_f_weather :1;
  unsigned  g_b_f_ovrd2 :1;
  unsigned  g_b_f_safety :1;
}
```

Range of values: *.*_cmd*
0 … 15 command index of device parameter *UCPTcmdTable*
.return_behave
0 REBH_NUL do nothing
1 REBH_LAST_CMD recall last absolute positioning value
2 REBH_SPECIFIC_CMD use specific control value / movement command
*.get_back_from_**
0 recall from this priority permitted
1 recall from this priority allowed

Presetting: {0 0 0 0 0 0 0 0}

`UCPTenableSourceInfo` for future use

Type: boolean (UCPT #107)

Presetting: not used (0)

`UCPTprioToSave` Saving priorities

Type: structure (UCPT #135)

Structure:
```
typedef struct{
  unsigned  save_auto :1;
  unsigned  save_man :1;
  unsigned  save_ovrd1 :1;
  unsigned  save_weather :1;
  unsigned  save_ovrd2 :1;
  unsigned  save_safety :1;
}
```

Range of values:
0 do not save
1 save non-volatile

Presetting: Do not save {0 0 0 0 0 0 }

`UCPTpwmConfig` Parameter for pulse width modulation

Type: structure (UCPT #1)

Structure:
```
typedef struct{
  SNVT_time_sec   cycle_time;
  SNVT_lev_cont   max_on;
}
```

Range of values:
.cycle_time
0 no PWM
1,0 ...6553,5 s PWM-Cycle
.max_on
0,5 … 100,0% max. valve position

Presetting: no PWM { 0, 200}

`UCPToutRange` Limit of the output range

Type: structure (UCPT #10)

Structure:
```
typedef struct{
  SNVT_lev_percent min_output;
  SNVT_lev_percent max_output;
}
```

Range of values: *.min_output / .max_output*
-100,00% … 100,00 %

Presetting: 0,00% - 100% {0 20000}

`UCPTvalveMaint` Configuration of valve rinsing

Type: structure (UCPT #129)

Structure:
```
typedef struct{
  unsigned  maint_period;
  unsigned  accept_on_values:1;
  unsigned  end_on_off:1;
}
```

Range of values:
.maint_period
0 No valve rinsing
1...63 Prior days of inactivity
.accept_on_values
TRUE Accept on values under 100%
FALSE Ignore on values under 100%
.end_on_off
TRUE Valve rinsing ends on off values
FALSE Off values can't stop valve rinsing

Presetting: Valve rinsing after 7 prior days of inactivity, accepting on values under 100 % and ignoring off values