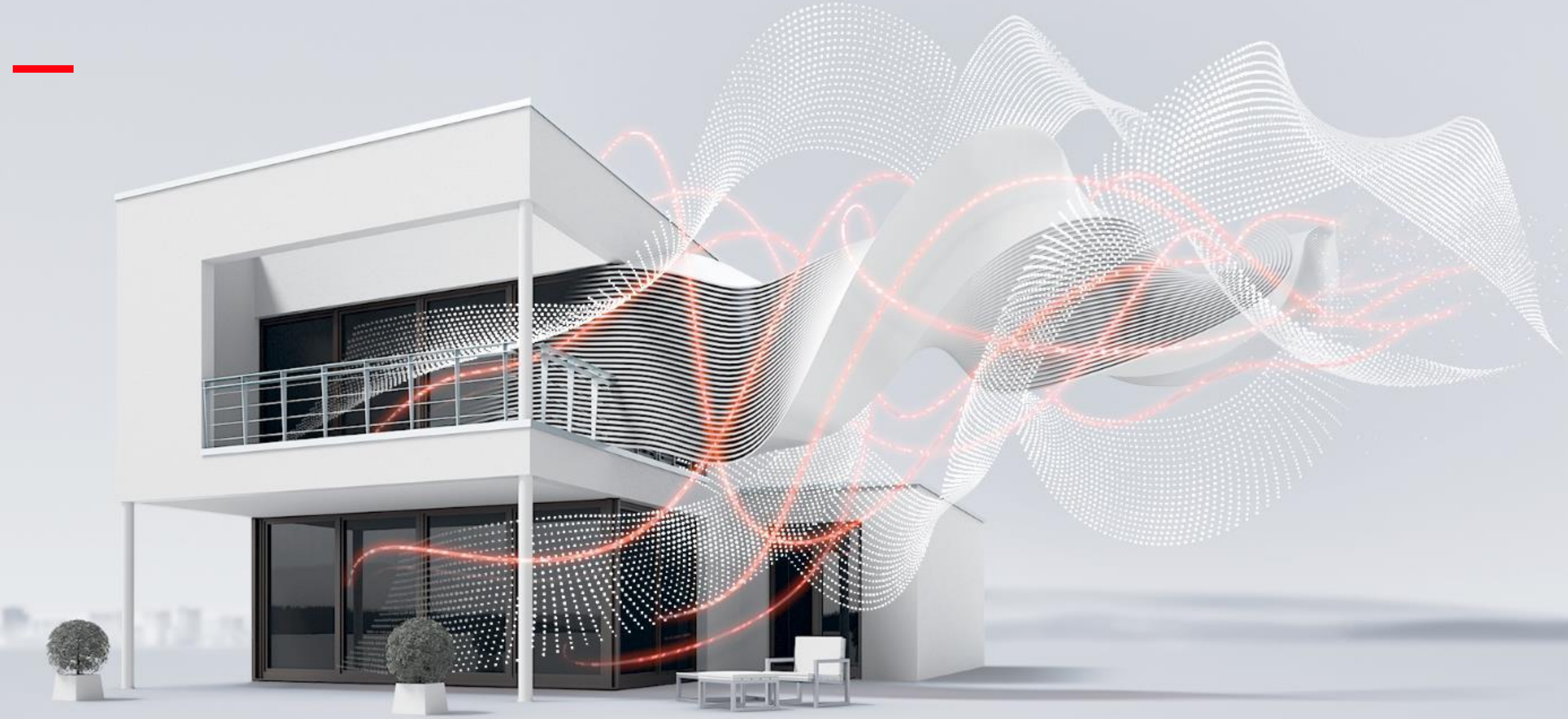


MAY 2018

ClimaECO – HVAC with ABB i-bus®KNX

Webinar – Competence Center Europe – Building Automation

Ilija Zivadinovic, Martin Wichary, Juergen Schilder, Thorsten Reibel

ClimaECO: ABB i-bus® KNX HVAC Solutions

Agenda

ClimaECO – Intro

Argumentation and Principle

Introduction into the Product Range

Links and Timetable

ClimaECO

by

ABB

ClimaECO?

ECOlogical Climate?

ECOnomical Climate?

Perhaps …

©ABB

For sure!

©ABB

Everybody needs …

Heating …

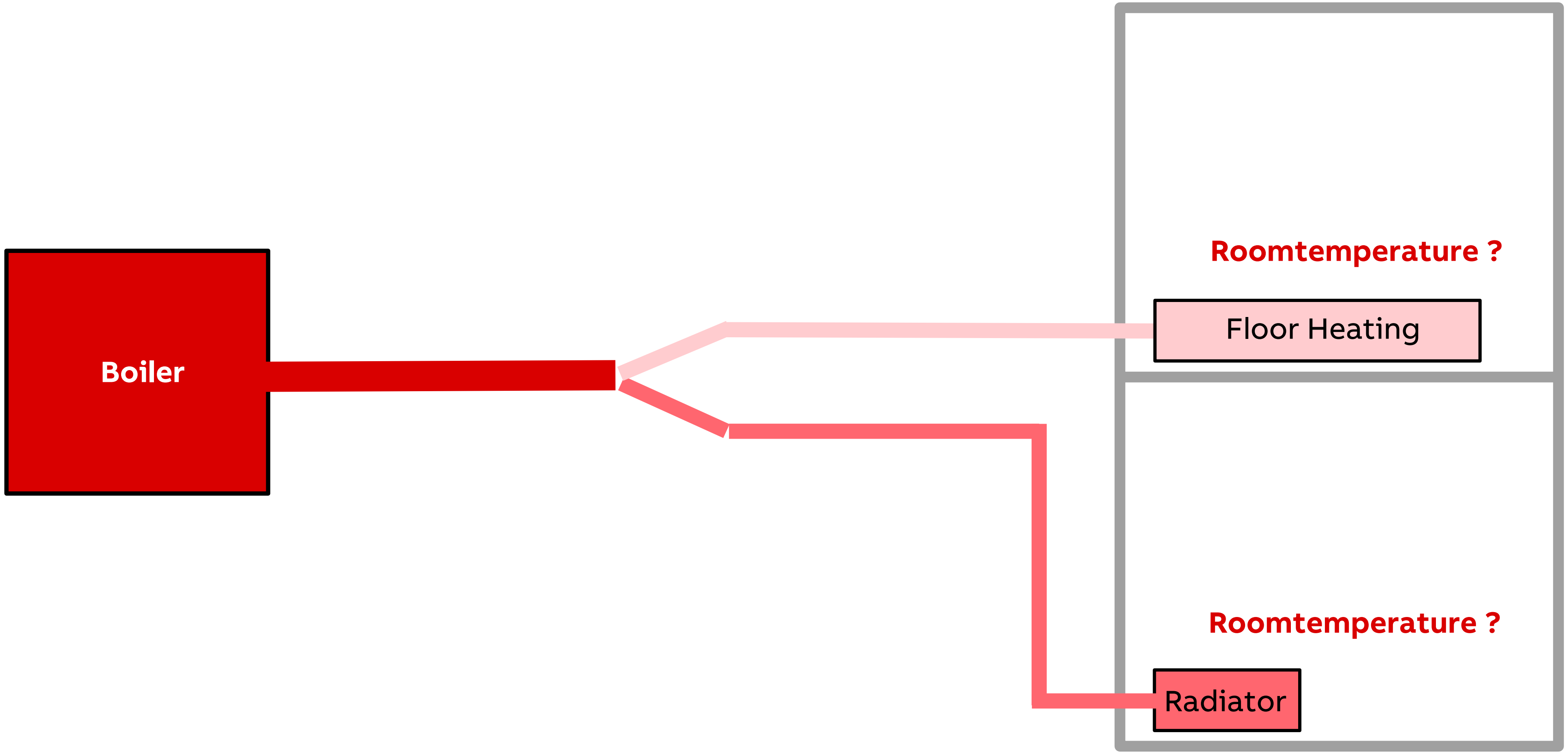
©ABB

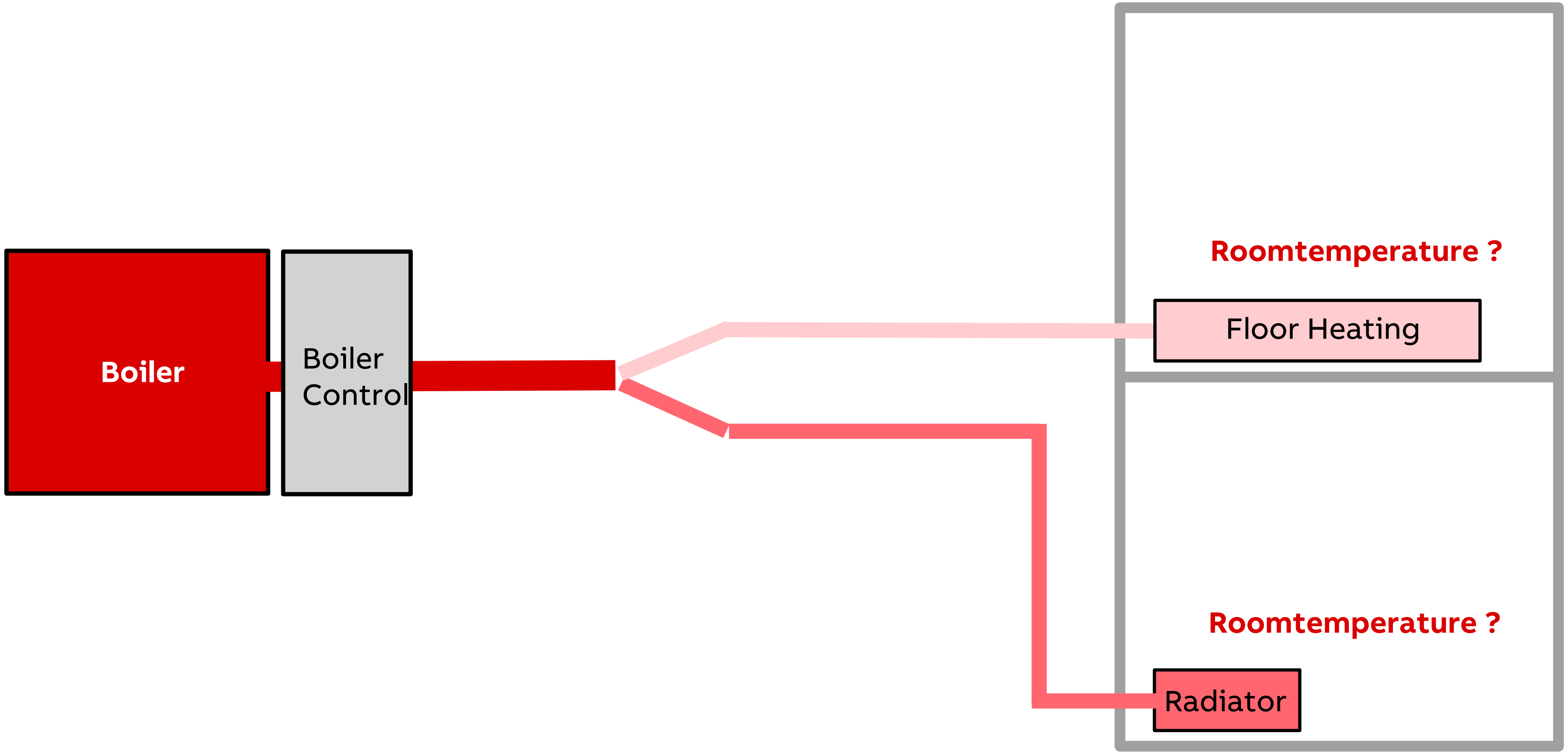
and/or Cooling

Heating with ClimaECO

…

©ABB


Boiler
Roomtemperature ?
Floor Heating
Roomtemperature ?
Radiator


Boiler
Boiler Control
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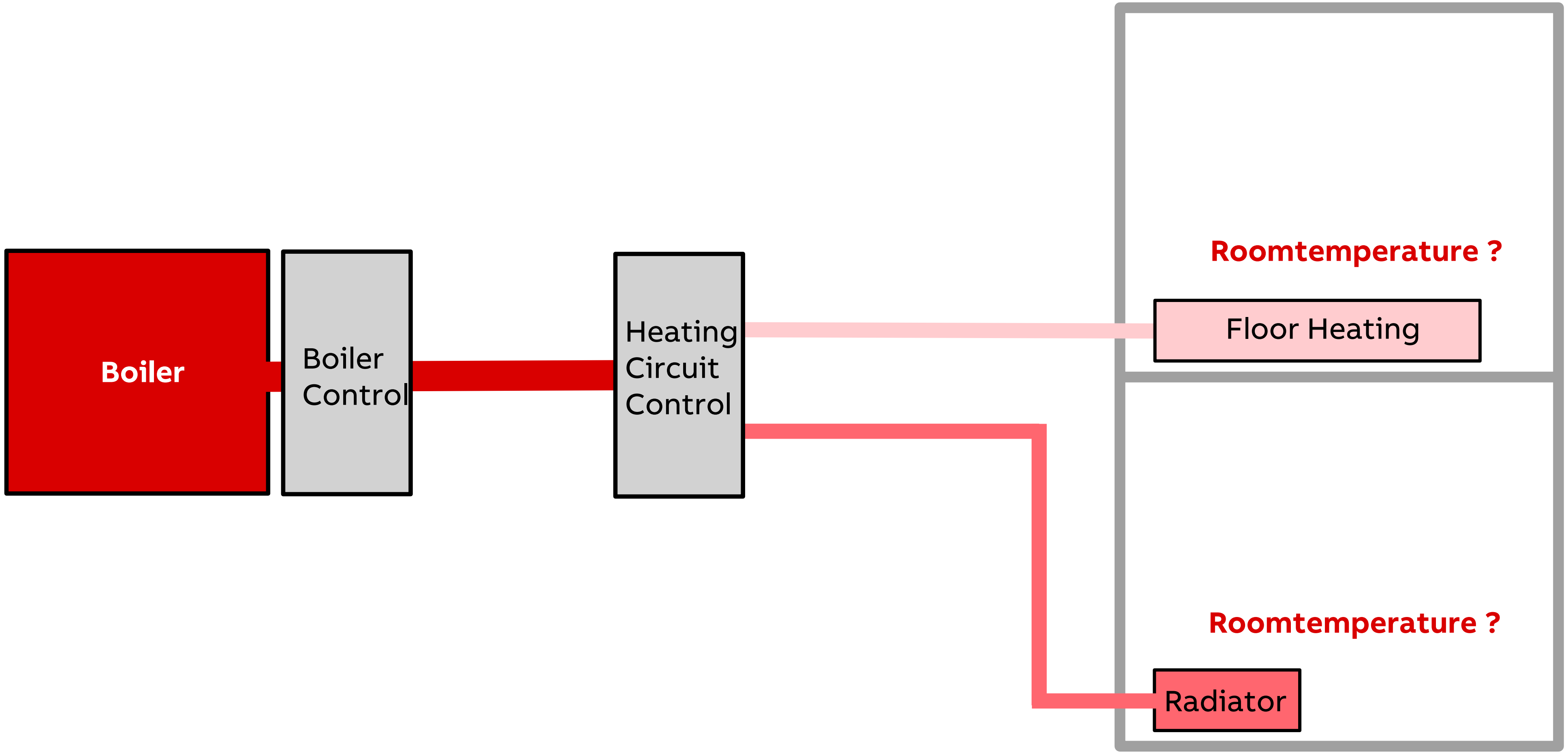
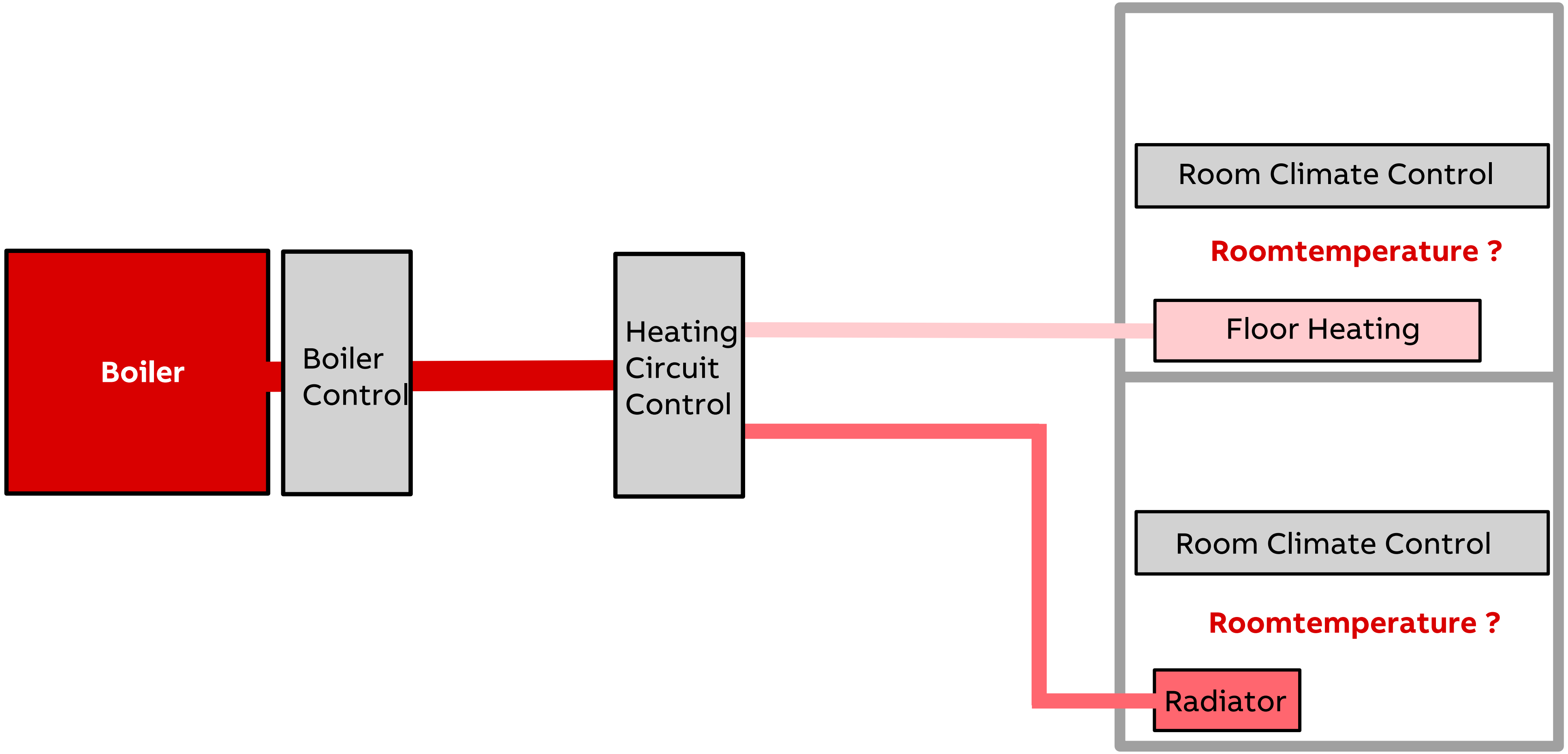

Boiler
Boiler Control
Heating Circuit Control
Roomtemperature ?
Floor Heating
Roomtemperature ?
Radiator



Boiler

Boiler Control

Heating Circuit Control

Room Climate Control

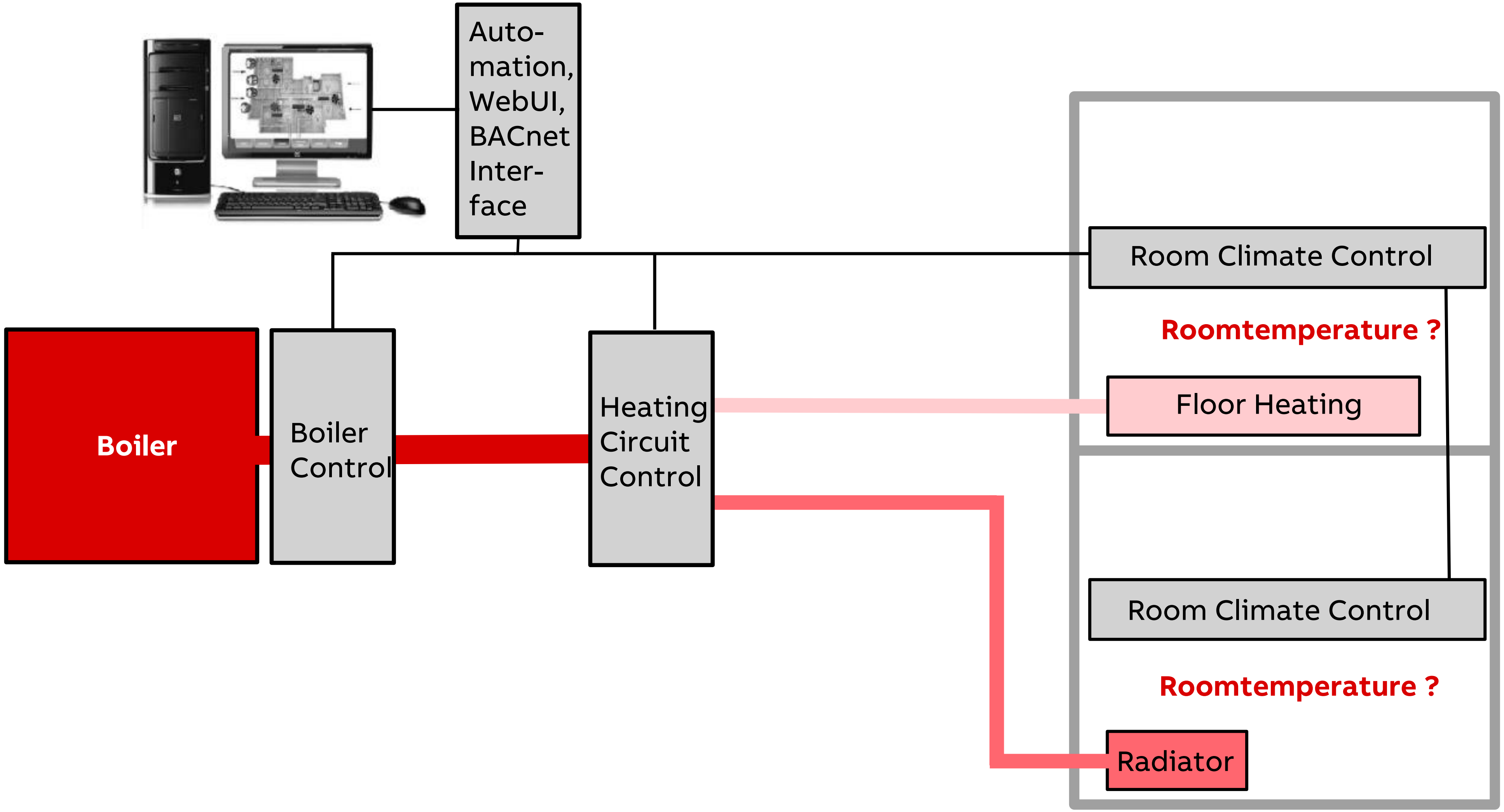
Roomtemperature ?

Floor Heating

Room Climate Control

Roomtemperature ?

Radiator



Auto-mation, WebUI, BACnet Inter-face

Room Climate Control

Roomtemperature ?

Floor Heating

Boiler

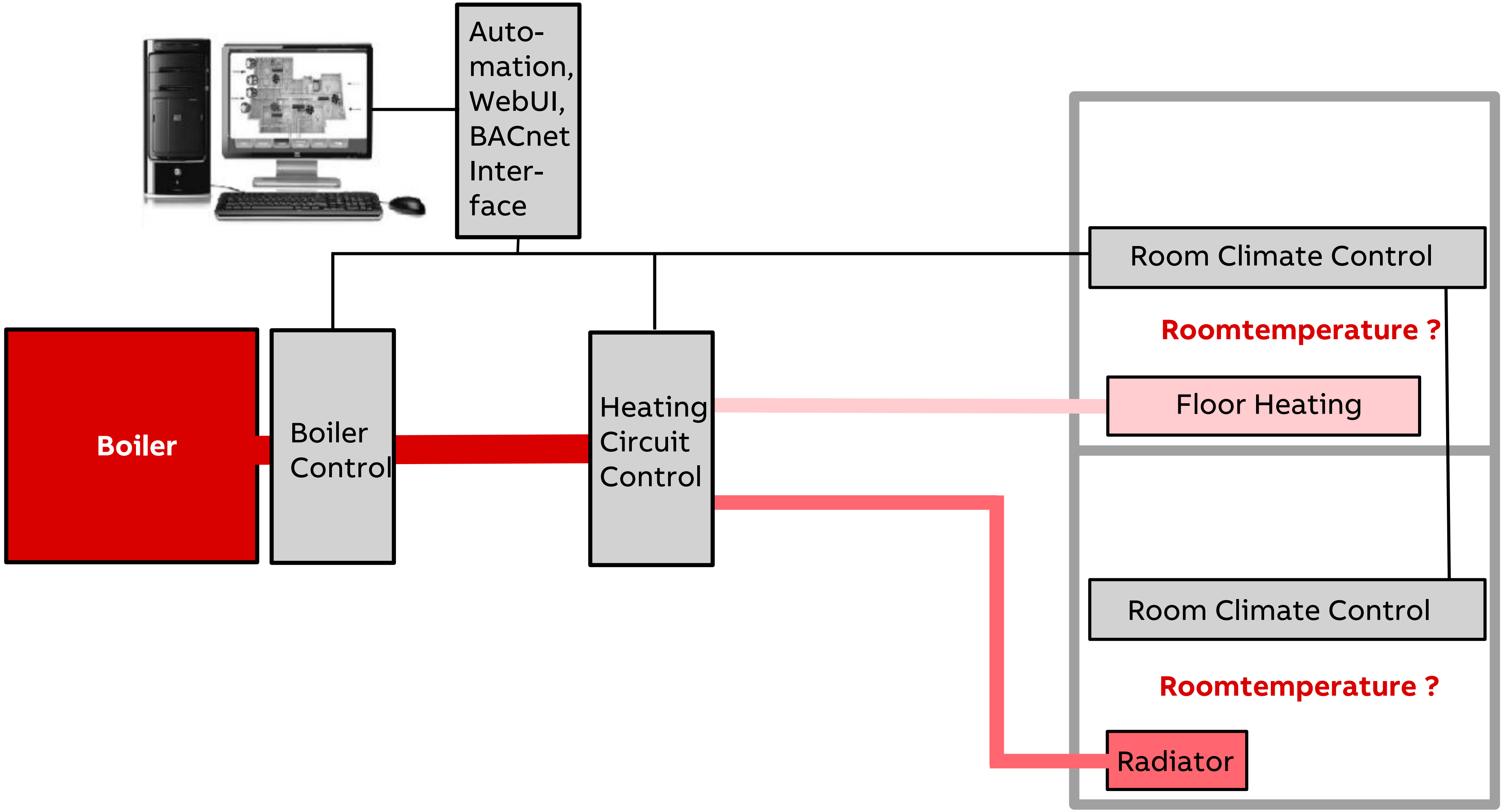
Boiler Control

Heating Circuit Control

Room Climate Control

Roomtemperature ?

Radiator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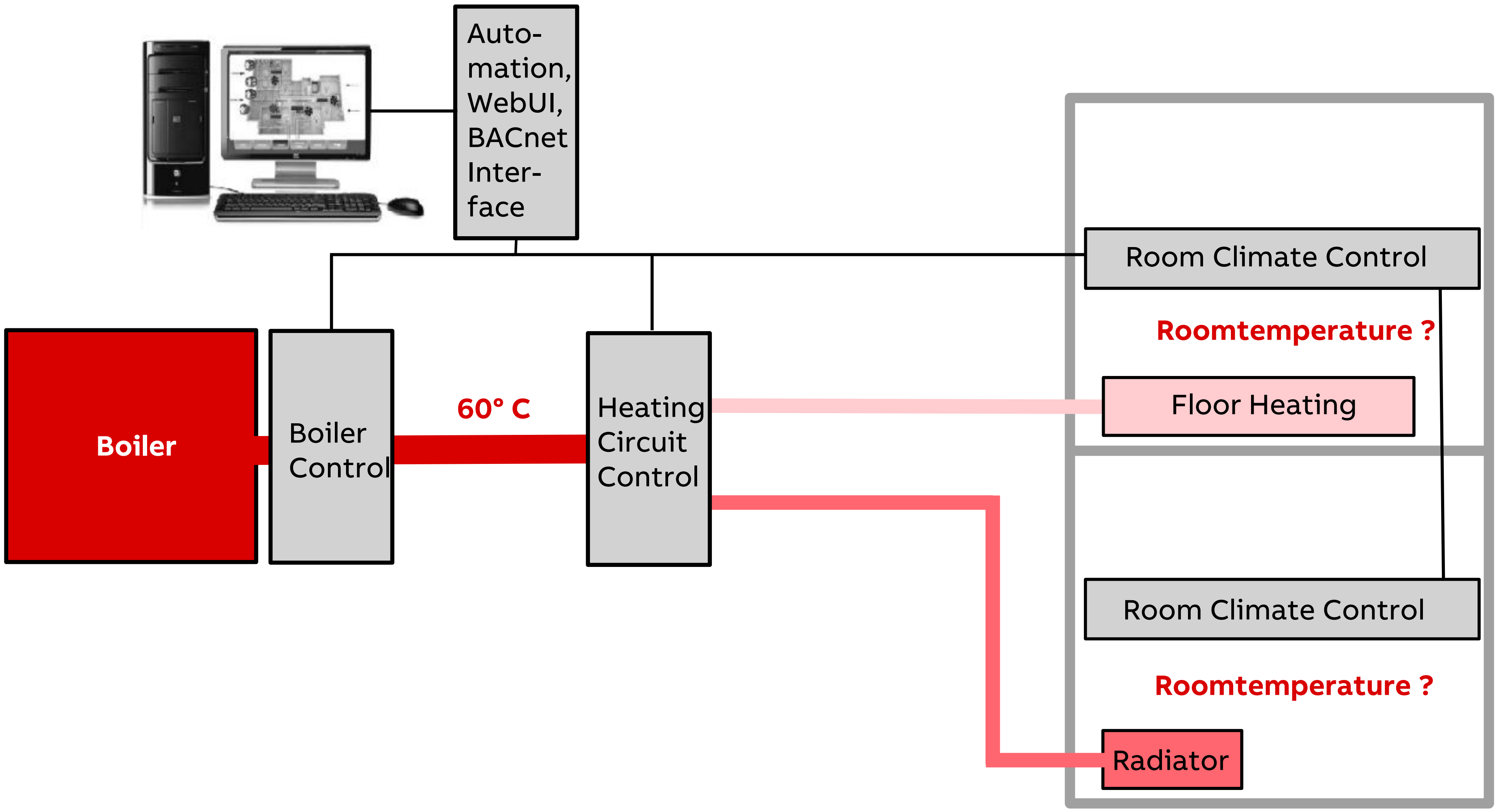
Radiator



Auto-mation, WebUI, BACnet Inter-face

Room Climate Control

Roomtemperature ?

Floor Heating

Boiler

Boiler Control

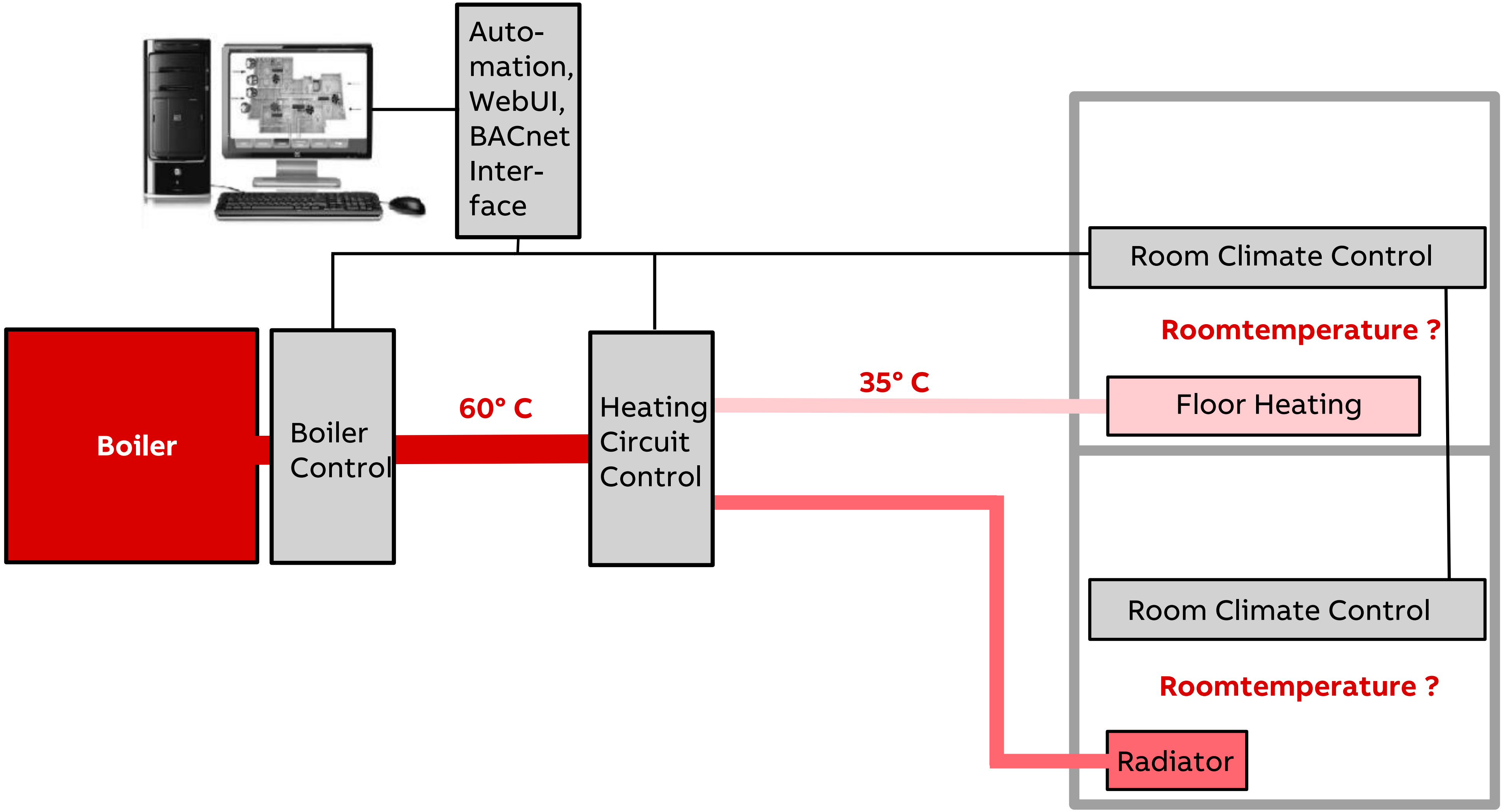
60° C

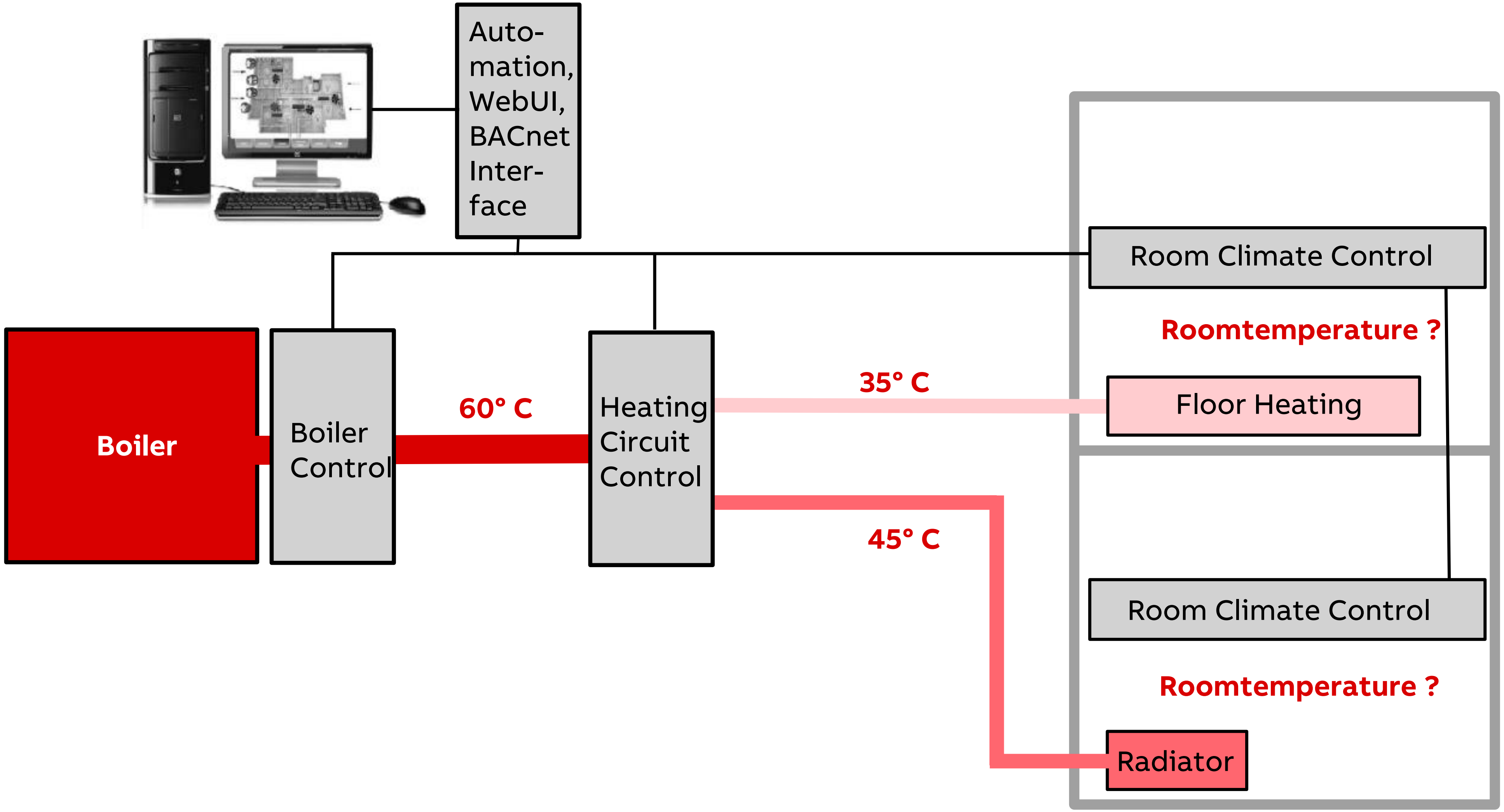
Heating Circuit Control

Room Climate Control

Roomtemperature ?

Radiator


Auto-mation, WebUI, BACnet Inter-face
Room Climate Control
Roomtemperature ?
35° C
Floor Heating
Boiler
Boiler Control
60° C
Heating Circuit Control
Room Climate Control
Roomtemperature ?
Radiator



Auto-mation, WebUI, BACnet Inter-face

Boiler

Boiler Control

60° C

Heating Circuit Control

35° C

45° C

Room Climate Control

Roomtemperature ?

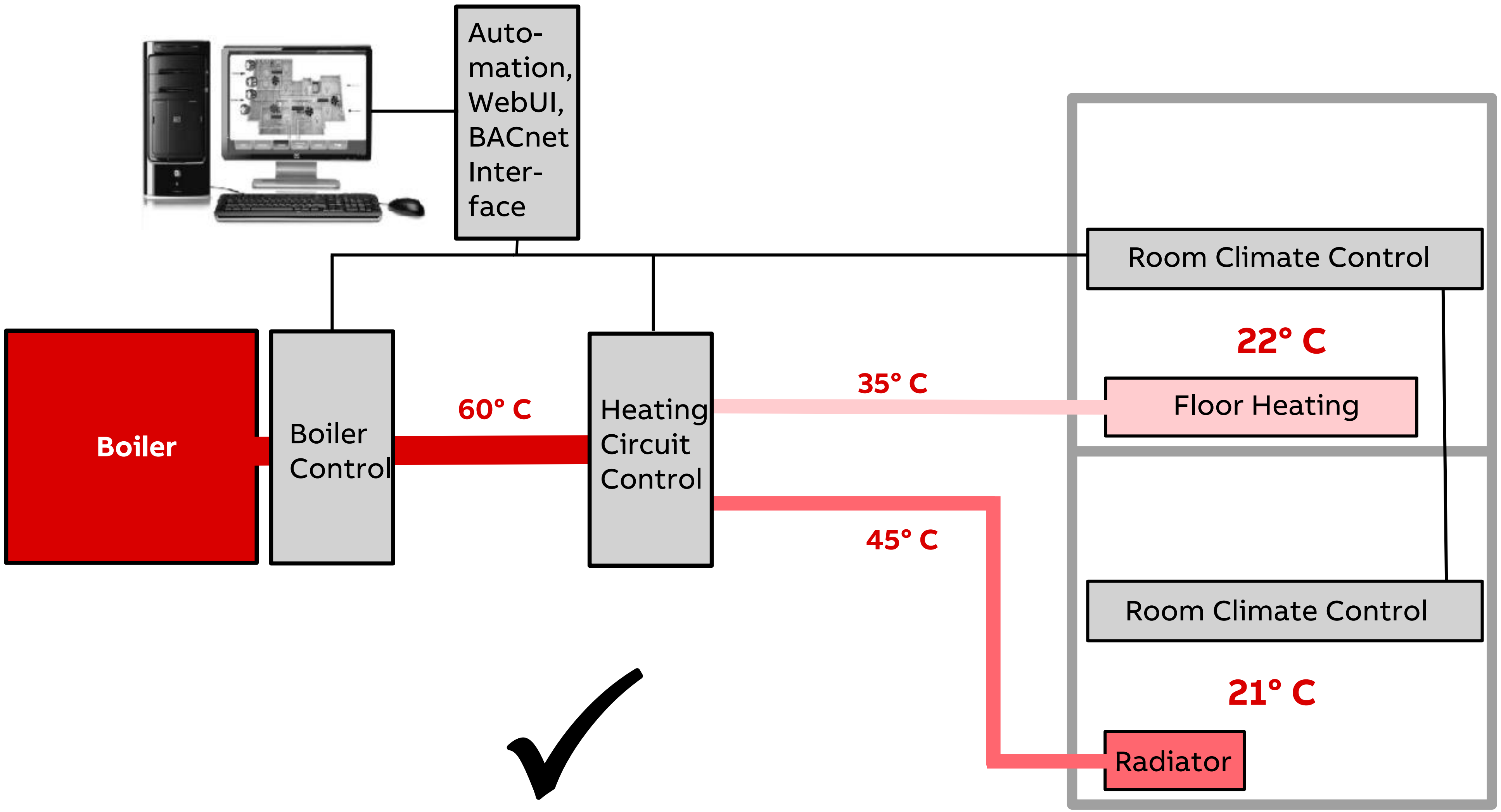
Floor Heating

Room Climate Control

Roomtemperature ?

Radiator

©ABB


Auto-
mation,
WebUI,
BACnet
Inter-
face
Room Climate Control
22° C
Floor Heating
35° C
Boiler
Boiler
Control
60° C
Heating
Circuit
Control
45° C
Room Climate Control
21° C
Radiator
✓

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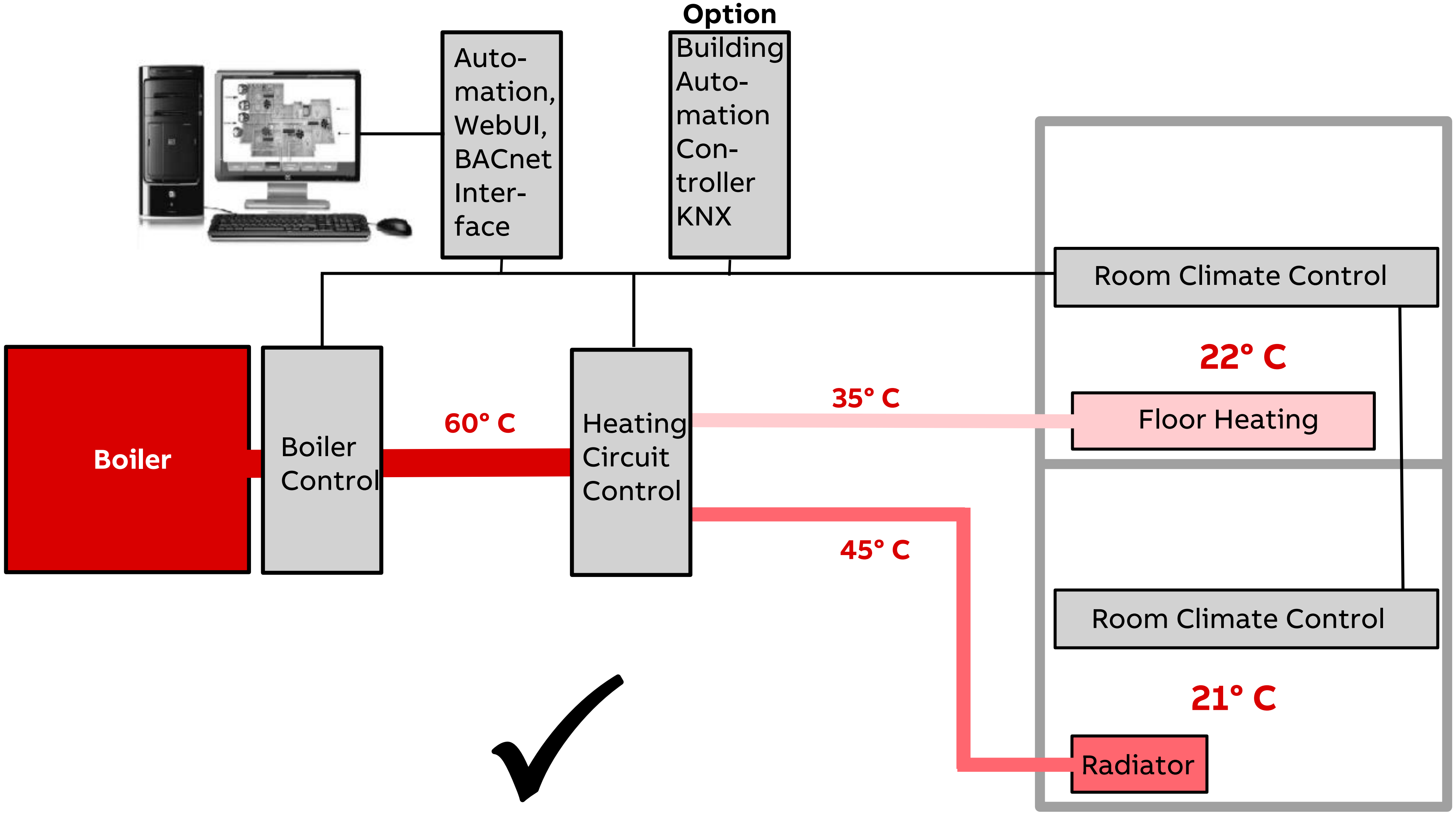

Auto-mation, WebUI, BACnet Inter-face

Option

Building Auto-mation Con-troller KNX

Room Climate Control

22° C

Floor Heating

Boiler

Boiler Control

60° C

Heating Circuit Control

35° C

45° C

Room Climate Control

21° C

Radiator

✓

Cooling with ClimaECO

…

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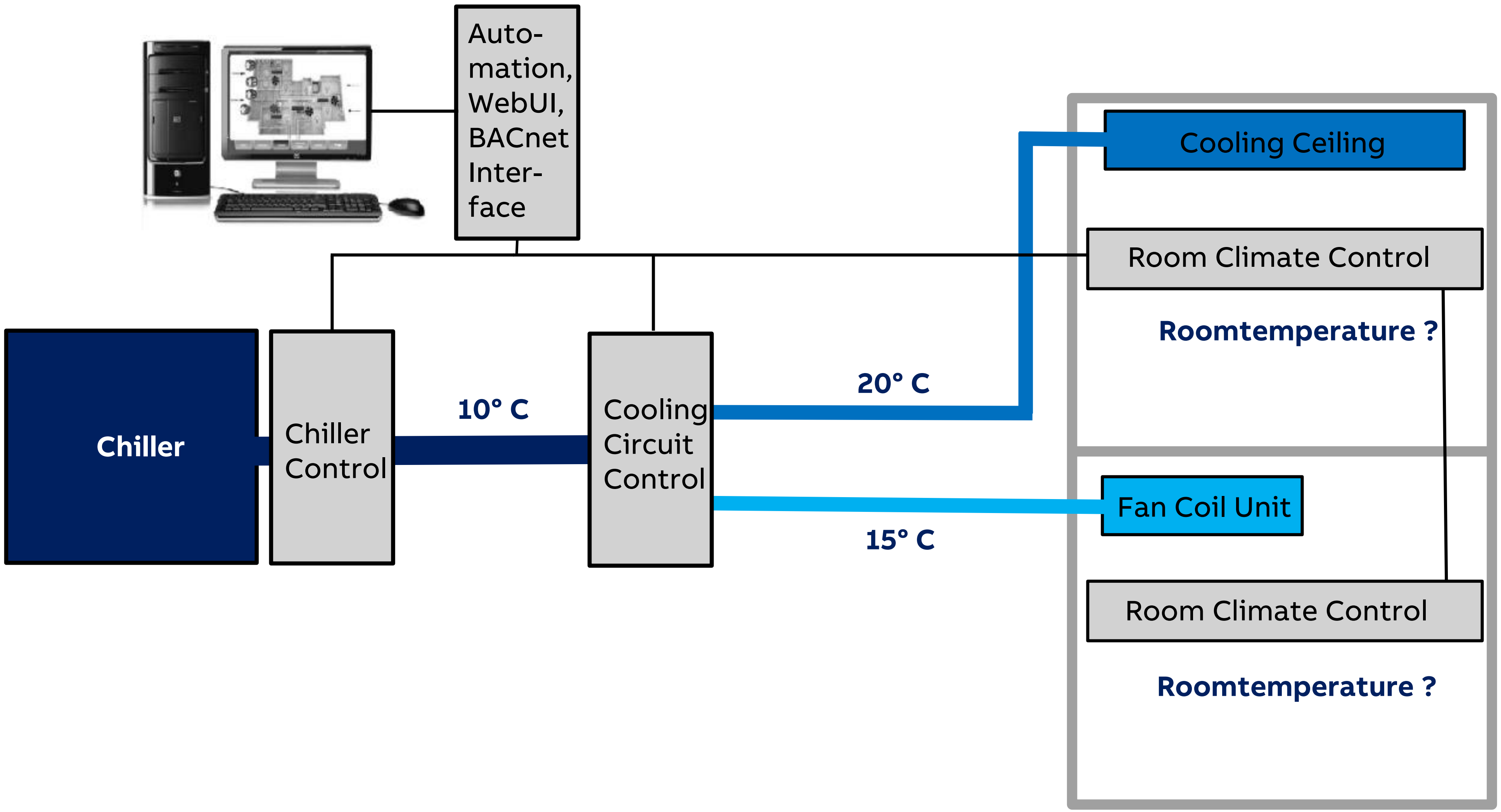


Auto-mation, WebUI, BACnet Inter-face

Cooling Ceiling

Room Climate Control

Roomtemperature ?

Chiller

Chiller Control

10° C

Cooling Circuit Control

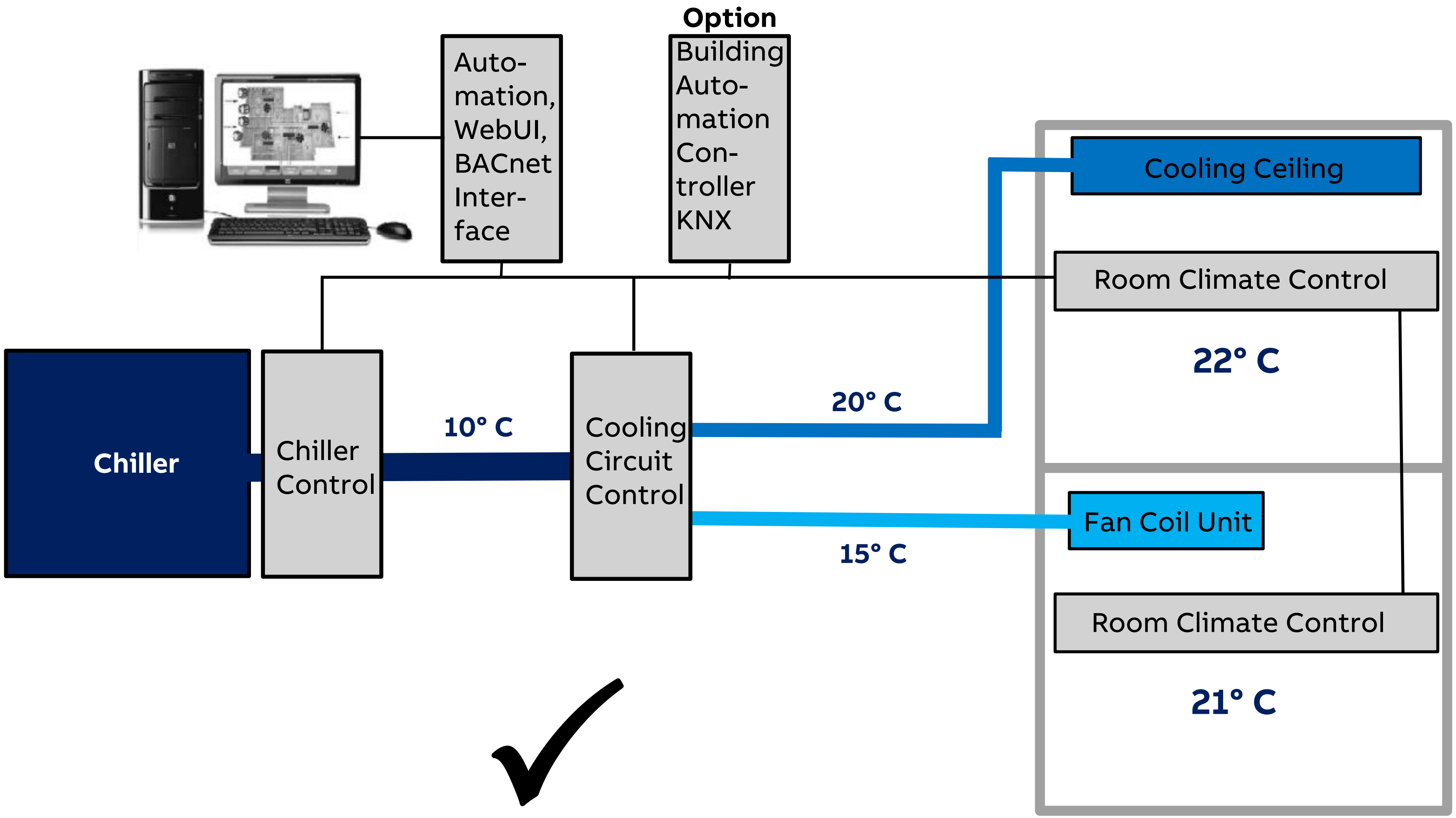
20° C

Fan Coil Unit

15° C

Room Climate Control

Roomtemperature ?



Auto-mation, WebUI, BACnet Interface

Option

Building Automation Controller KNX

Cooling Ceiling

Room Climate Control

22° C

Chiller

Chiller Control

10° C

Cooling Circuit Control

20° C

Fan Coil Unit

15° C

Room Climate Control

21° C

✓

ClimaECO …

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Heating and Cooling

from Generation

via Distribution

©ABB

to Consumption

©ABB

with Interface
to BACnet and Web

©ABB

optional Building Automation Controller KNX (PLC)

for High End Solutions

©ABB

efficient, precise, flexible

and …

consistently based on

KNX

supplied by

©ABB

ClimaECO: ABB i-bus® KNX HVAC Solutions

What is ClimaECO?

ClimaECO is our campaign to **highlight** our **HVAC Solutions** inside the **ABB i-bus® KNX** System.

Our ClimaECO offering consists of the **new developed Products** and the **established KNX HVAC range**.

The ClimaECO focuses now on **water based HVAC** and will be **extended** by **further Developments.**

©ABB

ClimaECO: ABB i-bus® KNX HVAC Solutions

Customer Value Proposition

Room

Room Solutions

A complete room automation solution for all types of commercial buildings

Building

Building Solutions

A holistic automation solution for small to medium commercial buildings

System Integrator

Consultant

Building Operator

Investor / Owner

Sales Channel Harmony

ABB as a product solution supplier presents no channel conflict to its partners as compared to notable ‘turn key’ competitors

Secure Investment

ABB is a reliable partner especially for Investors and Building Owners as compared to the small / local supplier.

Solutions based purely on open and standardized technologies thus no single source and reducing system dependencies.

Cost Saving

During planning, integration, maintenance and by energy efficiency. Achievement of energy efficiency class A according to EN 15232 with up to 30 percent energy savings

ClimaECO: ABB i-bus® KNX HVAC Solutions

Customer Value Proposition

System Integrator

Consultant

Building Operator

Investor / Building Owner

Consistent solution from Consumption to Generation

Customers expect as much as possible from one provider, both in software, hardware and service like consulting by ABB

Sophisticated Hardware

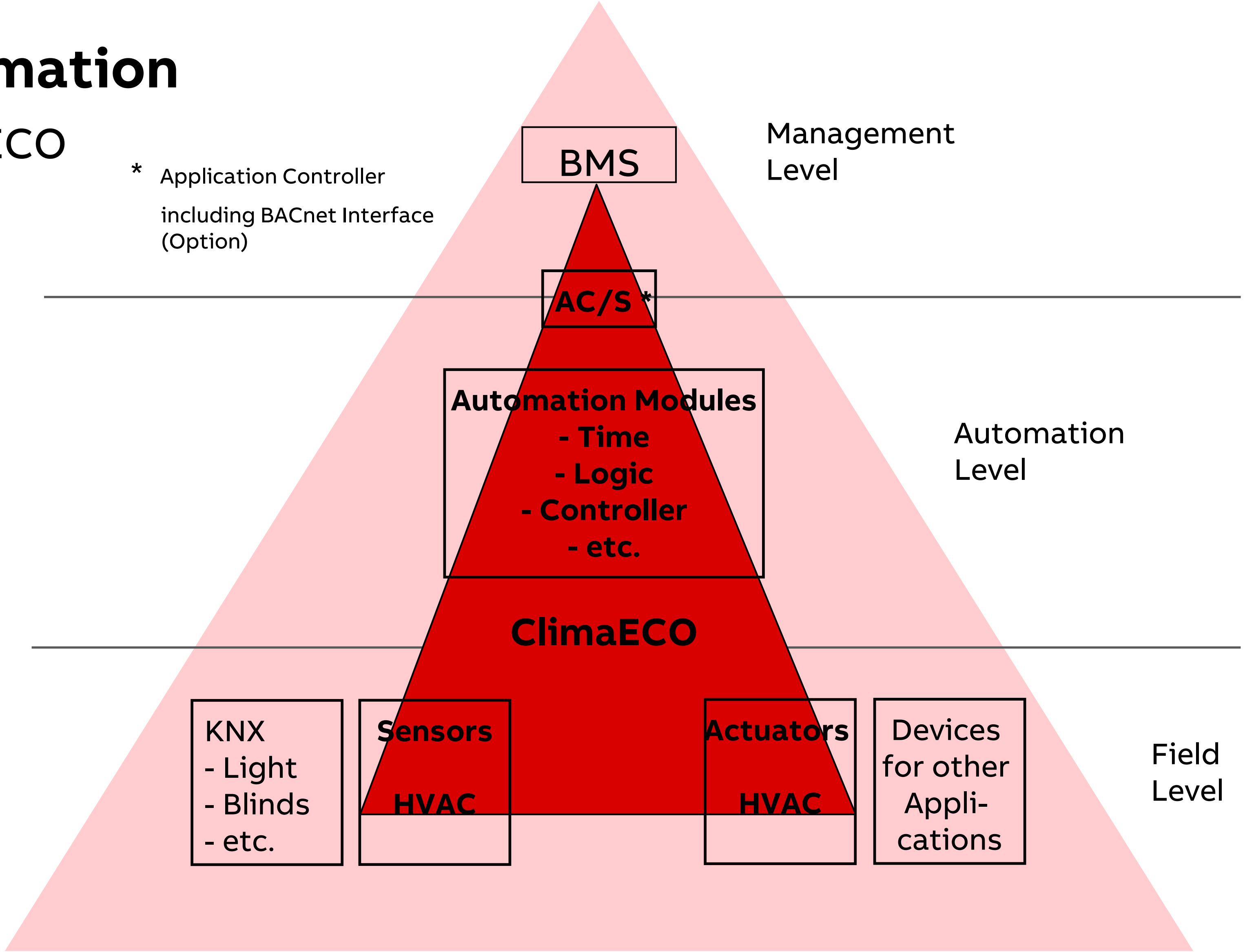
All necessary components from ABB made in Germany

Local Sales and worldwide Support

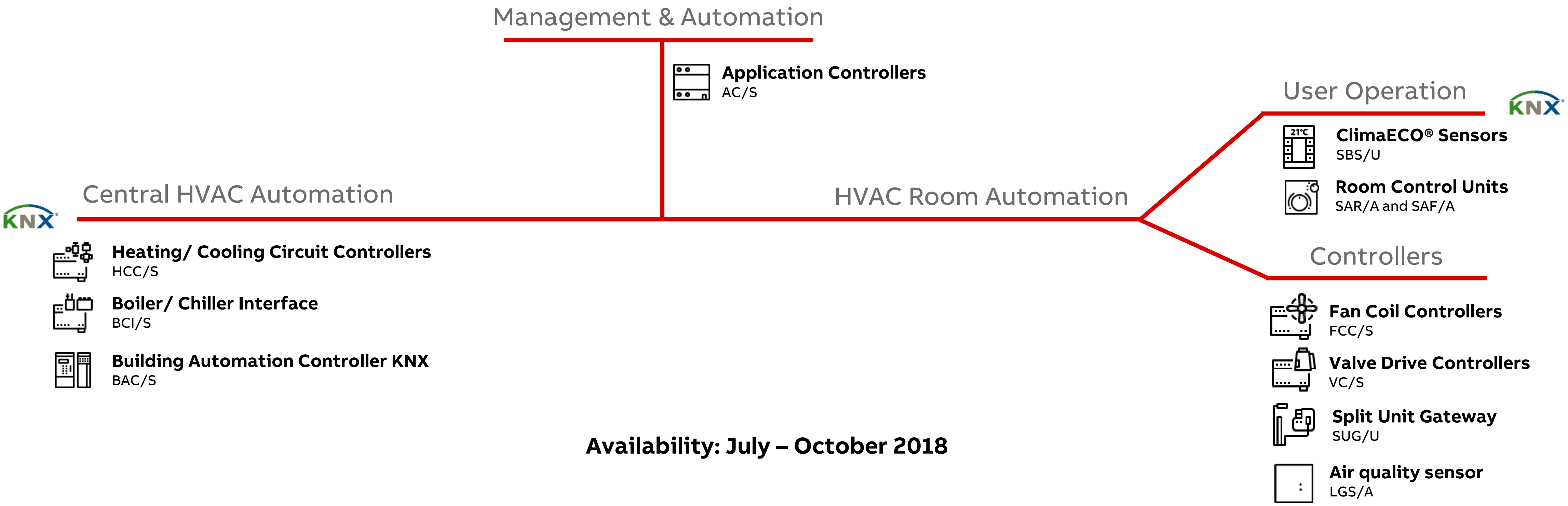
ABB as an international company with it’s impeccable reputation, proven in numerous projects at different locations all over the world, can give the necessary assistance to implement HVAC solutions based upon ClimaECO from ABB

Building Automation

Positioning ClimaECO


BMS
Management Level
* Application Controller including BACnet Interface (Option)
AC/S *
Automation Modules
- Time
- Logic
- Controller
- etc.
Automation Level
ClimaECO
KNX
- Light
- Blinds
- etc.
Sensors
HVAC
Actuators
HVAC
Devices for other Appli-cations
Field Level

ClimaECO: ABB i-bus® KNX HVAC Solutions



Management & Automation

Application Controllers
AC/S

Central HVAC Automation

Heating/ Cooling Circuit Controllers
HCC/S

Boiler/ Chiller Interface
BCI/S

Building Automation Controller KNX
BAC/S

HVAC Room Automation

User Operation

ClimaECO® Sensors
SBS/U

Room Control Units
SAR/A and SAF/A

Controllers

Fan Coil Controllers
FCC/S

Valve Drive Controllers
VC/S

Split Unit Gateway
SUG/U

Air quality sensor
LGS/A

Availability: July – October 2018

A holistic HVAC Building Automation System, over 30 new devices

©ABB

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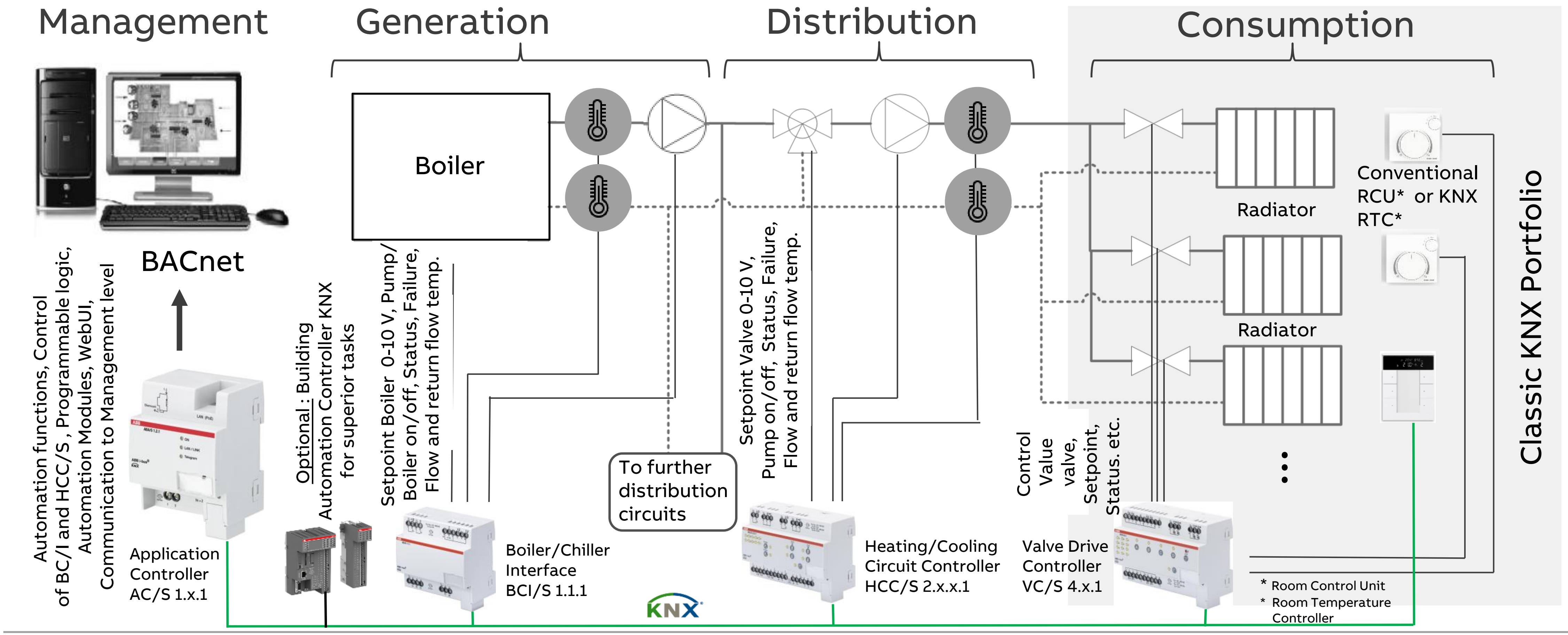
ClimaECO: ABB i-bus® KNX HVAC Solutions

Principle Heating with Radiator



Management

Generation

Distribution

Consumption

BACnet

Automation functions, Control of BC/I and HCC/S , Programmable logic, Automation Modules, WebUI, Communication to Management level

Application Controller AC/S 1.x.1

Optional: Building Automation Controller KNX for superior tasks

Boiler

Setpoint Boiler 0-10 V, Pump/ Boiler on/off, Status, Failure, Flow and return flow temp.

Boiler/Chiller Interface BCI/S 1.1.1

To further distribution circuits

Setpoint Valve 0-10 V, Pump on/off, Status, Failure, Flow and return flow temp.

Heating/Cooling Circuit Controller HCC/S 2.x.x.1

Control Value valve, Setpoint, Status. etc.

Valve Drive Controller VC/S 4.x.1

Radiator

Radiator

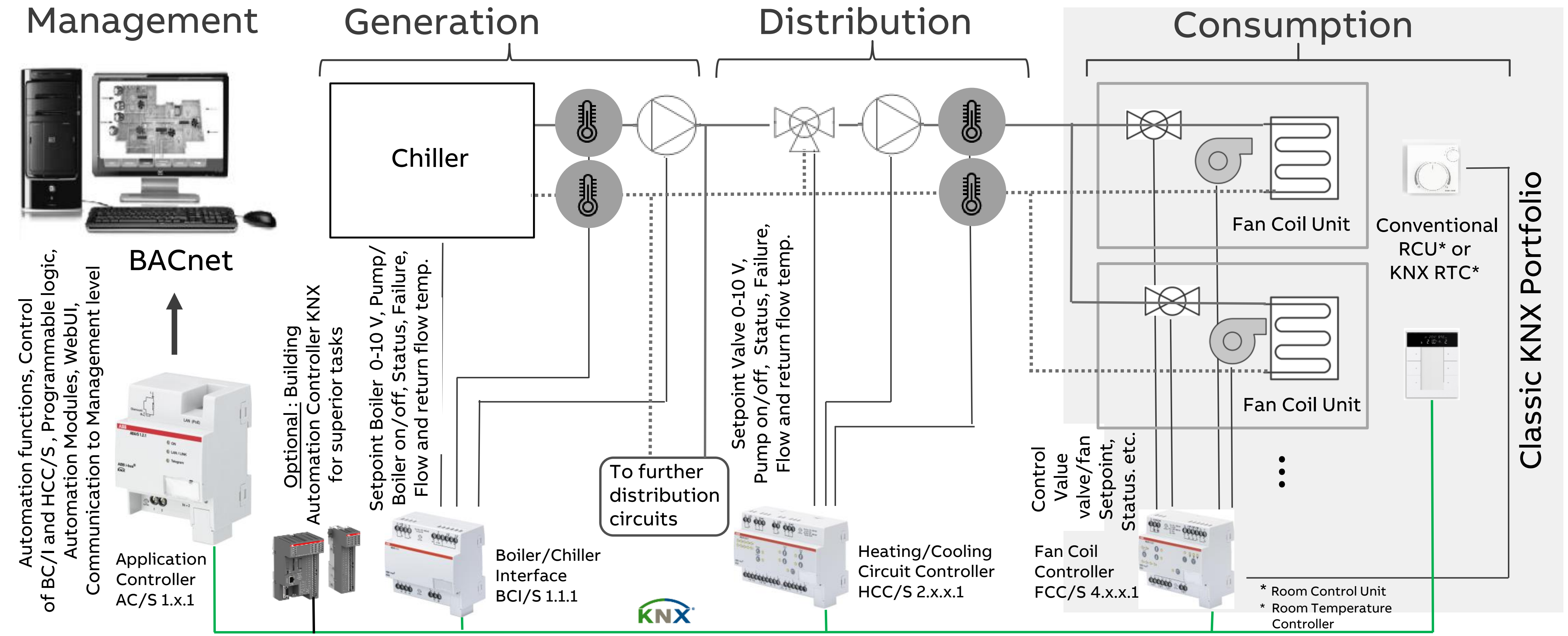
Conventional RCU* or KNX RTC*

Classic KNX Portfolio

* Room Control Unit
* Room Temperature Controller

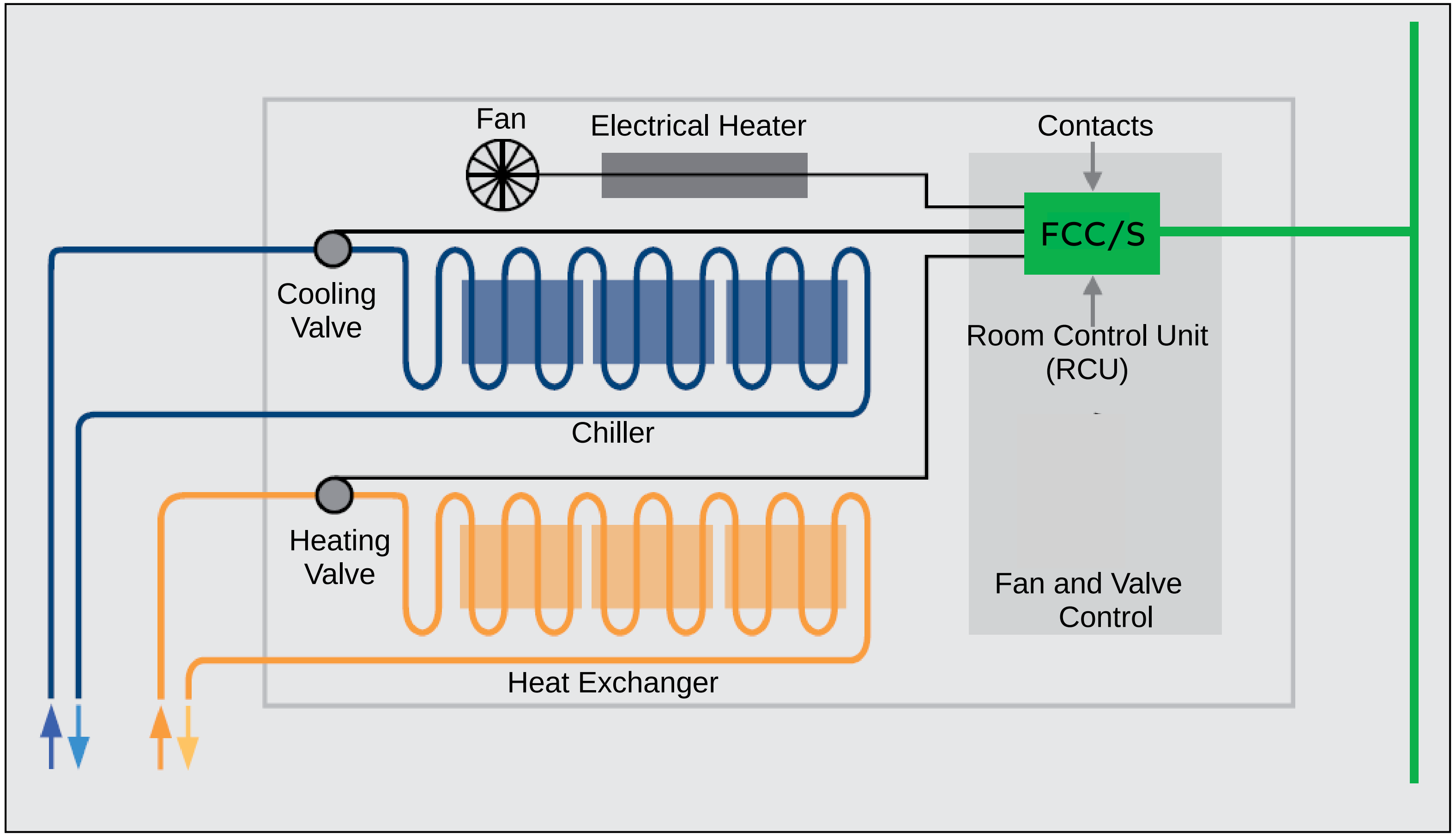
ClimaECO: ABB i-bus® KNX HVAC Solutions

Principle Cooling with Fan Coil Unit


Management
Generation
Distribution
Consumption
BACnet
Automation functions, Control of BC/I and HCC/S , Programmable logic, Automation Modules, WebUI, Communication to Management level
Application Controller AC/S 1.x.1
Optional: Building Automation Controller KNX for superior tasks
Chiller
Setpoint Boiler 0-10 V, Pump/ Boiler on/off, Status, Failure, Flow and return flow temp.
Boiler/Chiller Interface BCI/S 1.1.1
To further distribution circuits
KNX
Setpoint Valve 0-10 V, Pump on/off, Status, Failure, Flow and return flow temp.
Heating/Cooling Circuit Controller HCC/S 2.x.x.1
Control Value valve/fan Setpoint, Status. etc.
Fan Coil Controller FCC/S 4.x.x.1
Fan Coil Unit
Fan Coil Unit
Conventional RCU* or KNX RTC*
Classic KNX Portfolio
* Room Control Unit
* Room Temperature Controller

Fan Coil Controller FCC/S 1.x.x.1

Fan Coil Unit in principle


Fan
Electrical Heater
Contacts
FCC/S
Cooling Valve
Room Control Unit (RCU)
Chiller
Heating Valve
Fan and Valve Control
Heat Exchanger

Fan Coil Controller FCC/S 1.x.x.1

Introduction

Motivation – New Features

- Most comprehensive product family for controlling all kind of Fan Coil Units in the KNX market → 9 Components!
- Electrothermal and motor valve drives
  - 2 electronic outputs
- 0-10 V valve drives
  - 2 x 0-10 V outputs
- 1,2, or 3 step fan
- 0 - 10 V fan **NEW**
- All combinations of digital and analogue fan and valve control **NEW**
- Integrated room temperature controller for conventional Room Control Units (RCU) **NEW**

FCC/S 1.3.2.1
FCC/S 1.1.1.1
ABB i-bus KNX

Fan Coil Controller FCC/S 1.x.x.1

Introduction

Motivation – New Features

- Parametrizable as actuator or controller/actuator NEW
- With and without manual operation
- 4 inputs for digital and analogue signals (PT100, PT1000, KTY, NTC, NI 1000) and connection of conventional Room Control Unit (Setpoint and room temperature) NEW
- Control of 6-way valves NEW
- Control of VAV flaps (**V**ariable **A**ir **V**olume) NEW
- ABB i-bus tool support
- With and without manual operation
- Budget variant (FCC/S 1.4.1.1) with one valve output (2 step or PWM), no additional switch contact and no manual operation NEW
- Existing Fan Coil Actuators FCA/S will be replaced
- Availability: July 2018

Fan Coil Controller FCC/S 1.x.x.1

Family FCC/S 1.x.x.1

FCC/S 1.1.1.1
3-step Fan, PWM 2-fold

FCC/S 1.1.2.1
3-step Fan, PWM 2-fold, man. Op.

FCC/S 1.2.1.1
3-step Fan, Valve 0-10 V

FCC/S 1.2.2.1
3-step Fan, Valve 0-10 V, man. Op.

FCC/S 1.4.1.1
3-step Fan, PWM **1-fold**
(no additional switch contact)

FCC/S 1.3.1.1
Fan 0-10 V, Valve 0-10 V

FCC/S 1.3.2.1
Fan 0-10 V, Valve 0-10 V, man. Op.

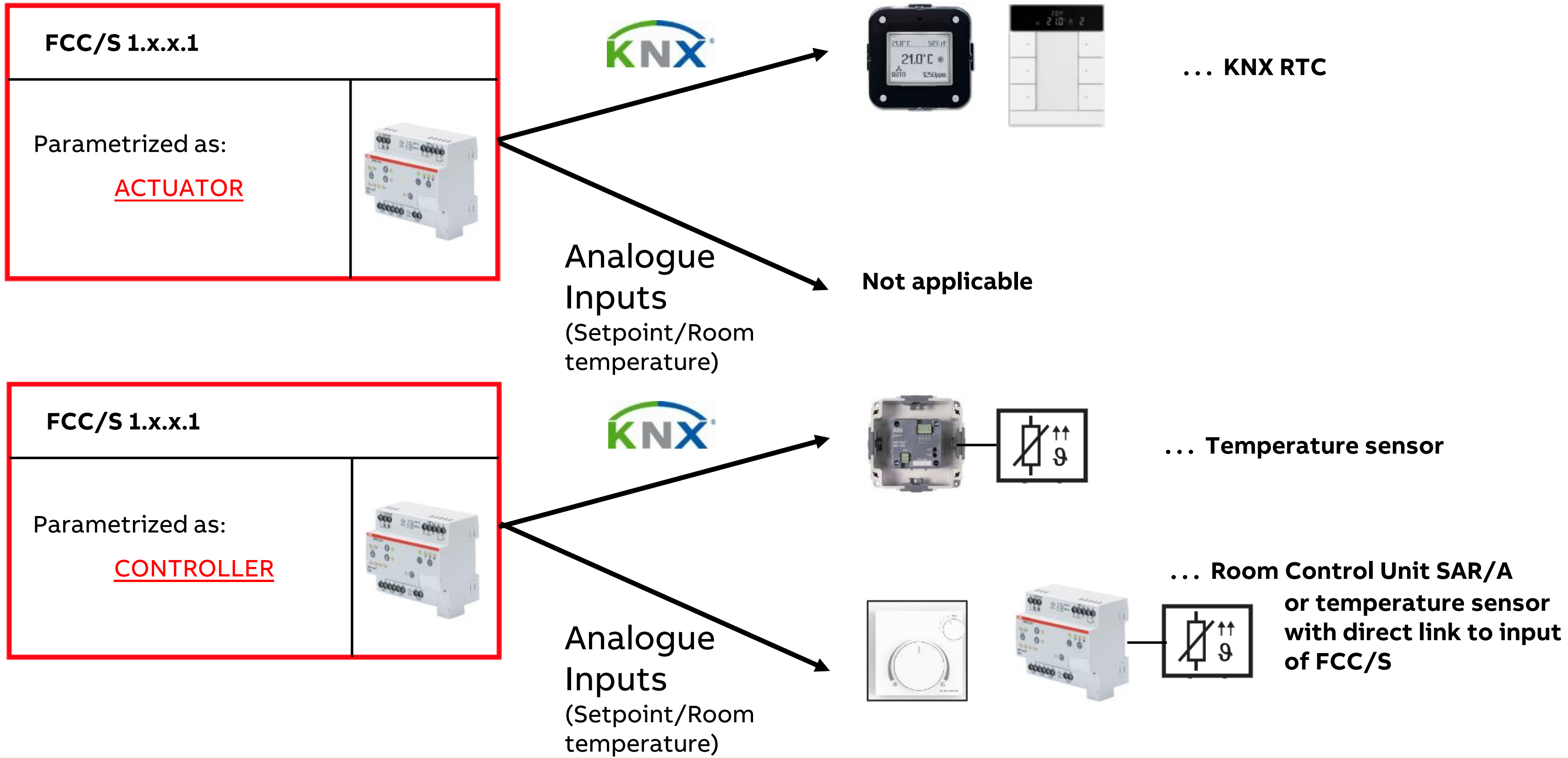
FCC/S 1.5.1.1
Fan 0-10 V, PWM 2-fold

FCC/S 1.5.2.1
Fan 0-10 V, PWM 2-fold, man. Op.

©ABB

Fan Coil Controller FCC/S 1.x.x.1

Assignment Controller - Actuator



FCC/S 1.x.x.1

Parametrized as:

ACTUATOR

KNX

. . . **KNX RTC**

Analogue Inputs
(Setpoint/Room temperature)

Not applicable

FCC/S 1.x.x.1

Parametrized as:

CONTROLLER

KNX

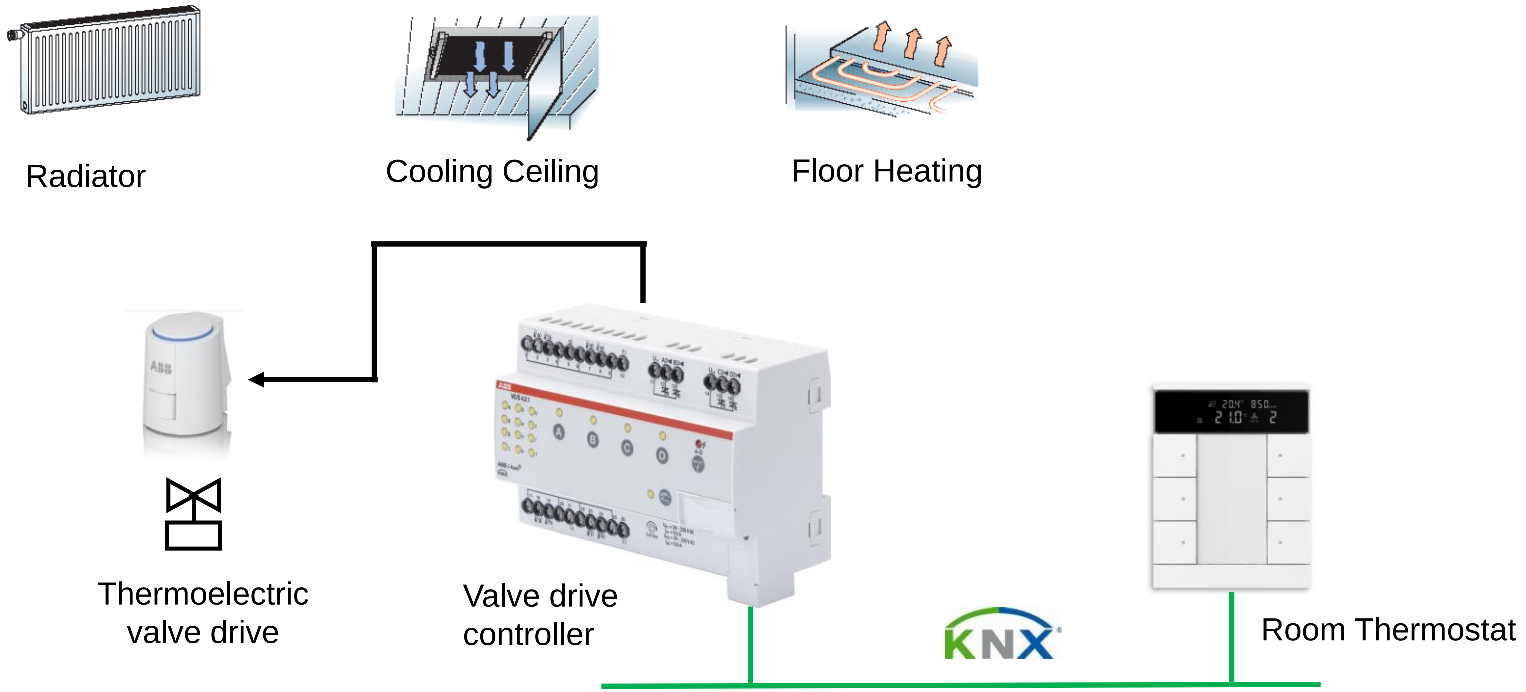
. . . **Temperature sensor**

Analogue Inputs
(Setpoint/Room temperature)

. . . **Room Control Unit SAR/A**
or temperature sensor
with direct link to input
of FCC/S

Valve Drive Controller VC/S 4.x.1

Valve control in principle



Radiator

Cooling Ceiling

Floor Heating

Thermoelectric
valve drive

Valve drive
controller

Room Thermostat

©ABB

Valve Drive Controller VC/S 4.x.1

Introduction

Motivation – New Features

- Two devices with four channels for valve control
- Electrothermal valve drives with four channels
- With and without manual operation
- 12 inputs (digital and analogue, 3 each channel) for temperature measurement, dew point sensor, window contact, etc.
- Integrated room temperature controller for conventional Room Control Units (RCU) NEW
- Parametrizable as actuator or controller/actuator NEW
- Existing Valve Drive Actuators will be not replaced

- Availability: August 2018

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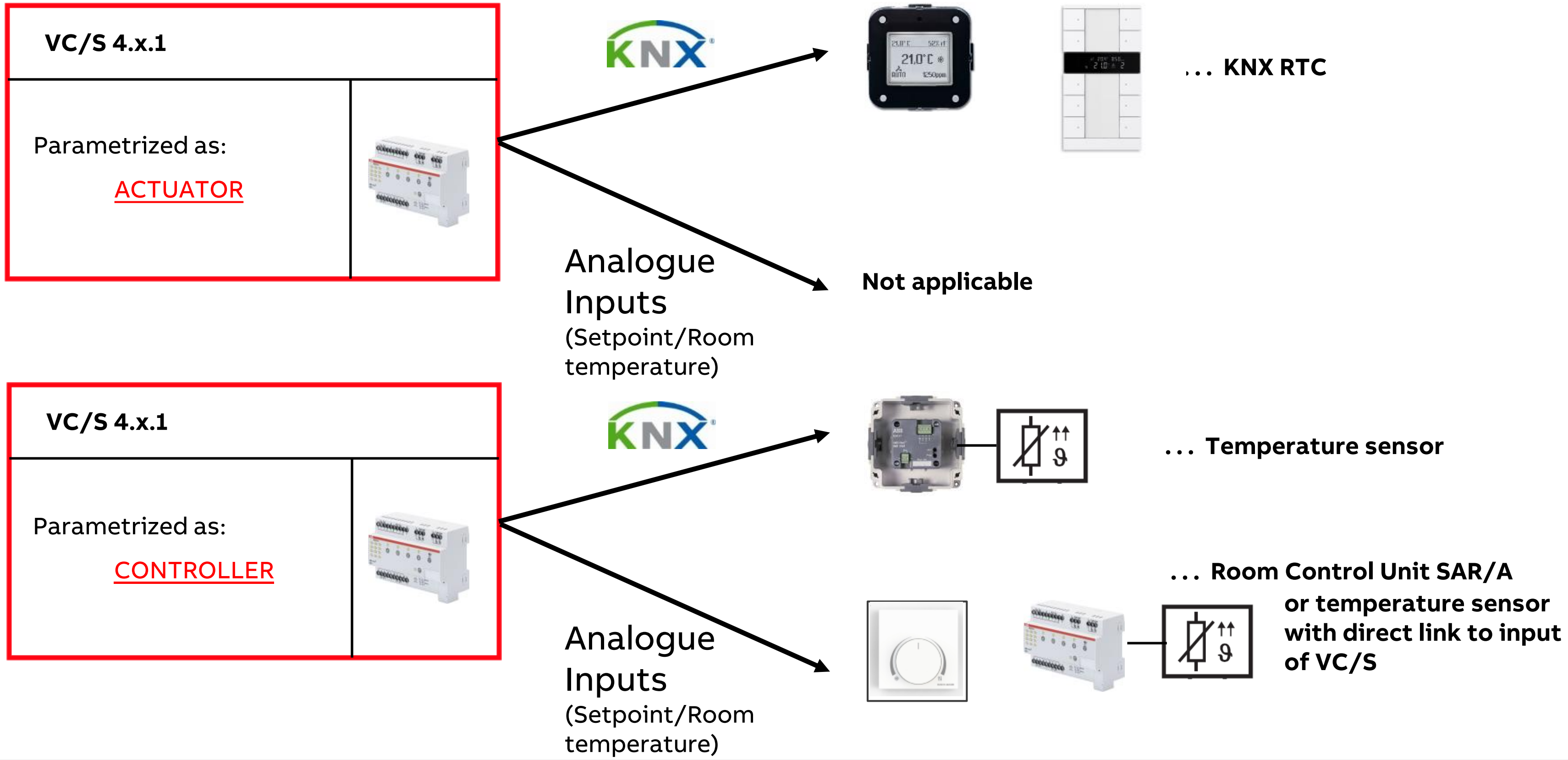
Valve Drive Controller VC/S 4.x.1

Assignment Controller - Actuator



VC/S 4.x.1

Parametrized as:

ACTUATOR

KNX

... **KNX RTC**

Analogue Inputs
(Setpoint/Room temperature)

Not applicable

VC/S 4.x.1

Parametrized as:

CONTROLLER

KNX

... **Temperature sensor**

Analogue Inputs
(Setpoint/Room temperature)

... **Room Control Unit SAR/A**
or temperature sensor
with direct link to input
of VC/S

Room Control Unit SAR/A and SAF/A

Introduction

Motivation – Features

- Conventional (non KNX!) operating element for room temperature control (RCU) NEW
- Works together with Controller in FCC/S or VC/S
- Lower in price
- to be competetive in projects with demands for this solution
- Simple and cost efficient user interface but powerful system behind
- Two devices:
  - SAR/A with set point control for radiators, floor heating and cooling ceiling
  - SAF/A with set point and fan speed control for fan coil units
- Integrated temperature sensor
- White color
- Surface mounted

BUSCH-JAEGER

Auto
0
1
2
3
BUSCH-JAEGER

©ABB

Room Control Unit SAR/A and SAF/A

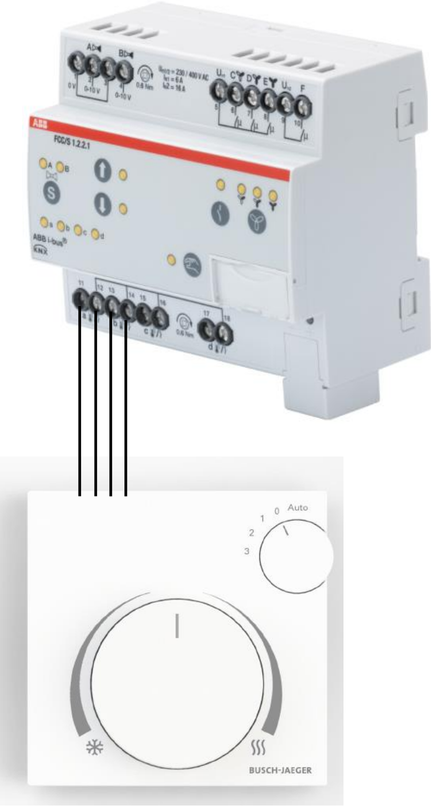
Introduction

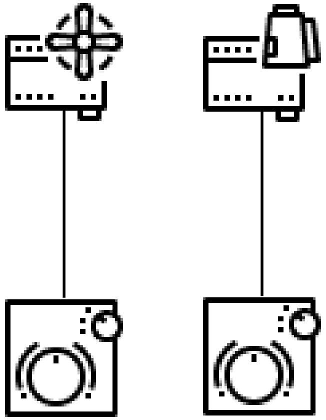
Example: Connection FCC/S

4 wires required

- 2 wires for setpoint input A (mandatory)
- 2 wires for room temperature
  - optional, can come also from another sensor, e.g. KNX presence detector
- Fan speed signal detection via different resistor levels on setpoint wires in addition to the resistance of the temperature sensor

- Availability: July 2018





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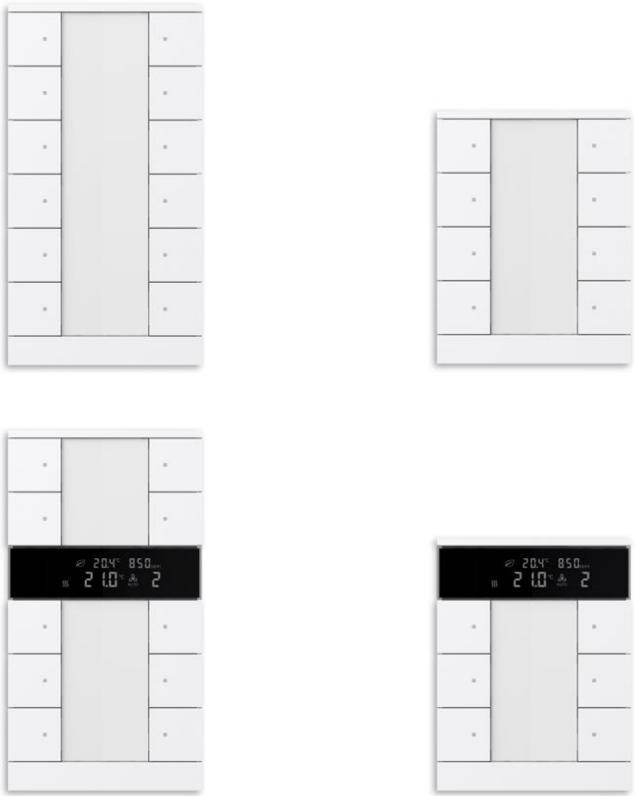
ClimaECO sensors

New Range of KNX sensors

Introduction

- New range of push button sensors and room temperature controller created together with the project ClimaECO
- Complete product range:
  - Control element 8-fold and 12-fold with integrated temperature sensor
  - Control element with RTC slave 6- and 10-fold
  - Control element with RTC 6- and 10-fold
  - Control element with RTC 6- and 10-fold plus CO_2 and humidity sensor and controller
- User friendly with an good User Interface-design for the devices with display
- Labelling with icons and/or text via an web-tool by the customer himself
- All devices with an mechanical anti theft protection



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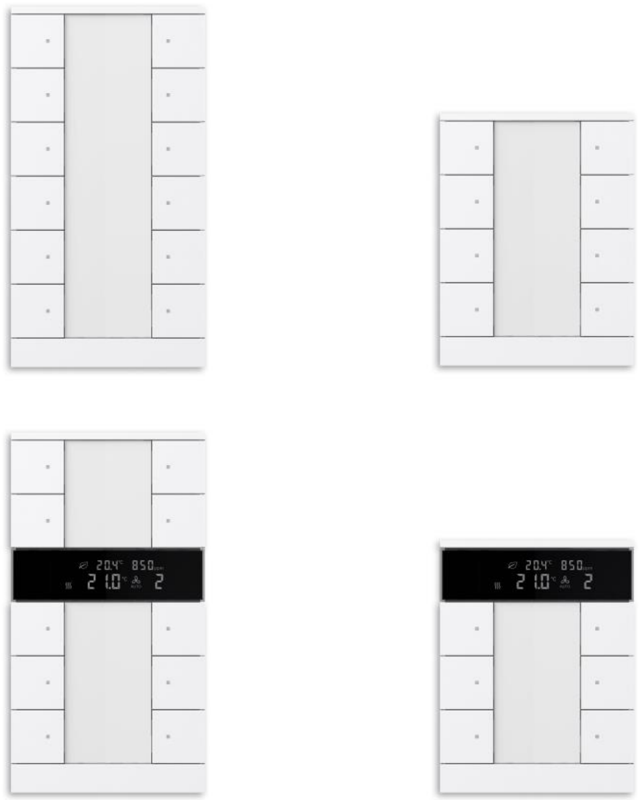
ClimaECO sensors

New Range of KNX sensors

Introduction

- Installation in every country in the world (VDE, BS, NEMA, Australian brackets, etc.)
- Sensors can be installed/mounted in a flush mounted box or separate surface mounted box
- Unified RTC concept
- Available in studio white (-84)
- Native ETS application for ETS4 and ETS5
- Values and icons are shown on a white illuminated display
- Status LED's with day and night mode
- Status LED's with ABB color concept
- No frame required

- Availability: August 2018



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Heating Cooling Circuit Controller HCC/S 2.x.x.1

Introduction

Why Heating Cooling Circuits in a HVAC System?

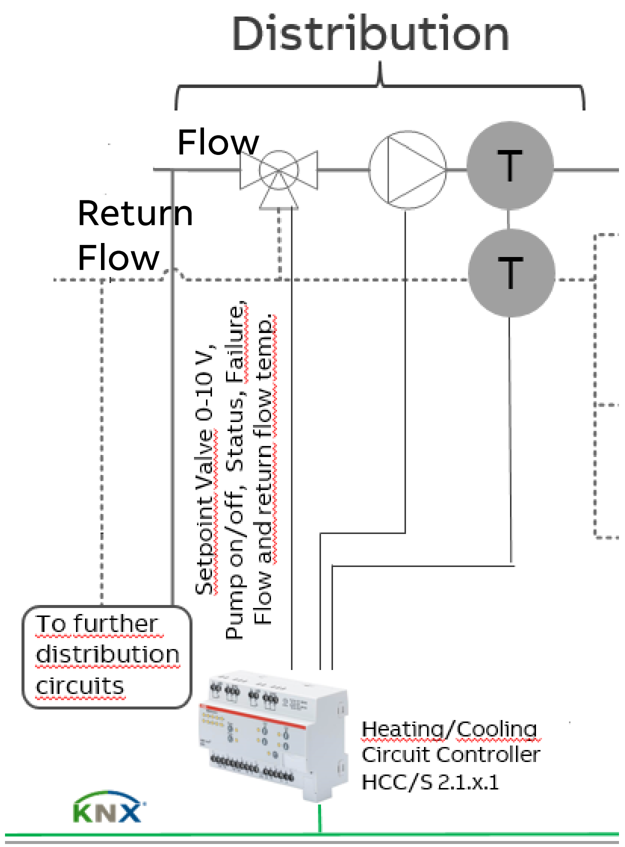
In a heating/cooling system the hot/cold water has to be distributed to various units in a building.

Units can be separate flats in a residential building, individual departments/shops in a commercial building, particular circuits for radiator or floor heating/cooling ceiling and more

Requirements of these units: individual consumption and measurement, different water temperature and pressure, turn off of the circuit (pump off and valve closed) and more

A Heating Cooling circuit Controller together with the valve, pump and temperature sensors can handle these requirements

→ For a holistic approach HCC/S 2.x.x.1 from ABB based on KNX


Distribution
Flow
Return Flow
T
T
Setpoint Valve 0-10 V,
Pump on/off, Status, Failure,
Flow and return flow temp.
To further distribution circuits
Heating/Cooling Circuit Controller HCC/S 2.1.x.1
KNX

Heating Cooling Circuit Controller HCC/S 2.x.x.1

Introduction

Motivation – New Features

- Control of Heating/Cooling Circuits NEW
- Control of mixing valve/3-way valve:
  - 0 - 10 V motor
  - 3 point motor
- Control of single/double pump of the heating cooling circuit
- 2 Channels
- Measurement of flow- and return flow temperature
- Binary inputs for status information of the pump

- Availability: August 2018

Boiler/Chiller Interface BCI/S 1.1.1

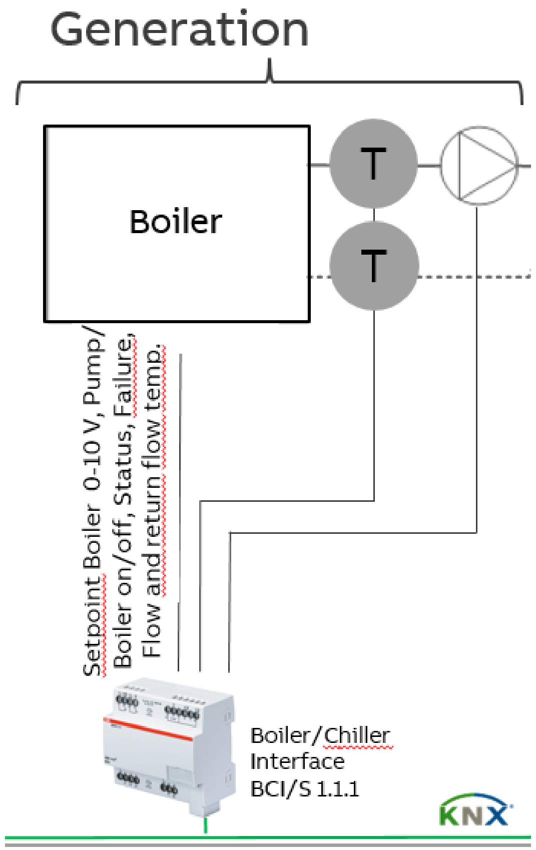
Introduction

Why Boiler/Chiller in a HVAC System?

In a heating/cooling system hot/cold water has to be generated with the right amount and temperature to be distributed to various circuits/units in a building.

A boiler or chiller produces the tempered water but has to be controlled depending on the demand of the total heating/cooling system

→ For a holistic approach Boiler Chiller Interface BCI/S 1.1.1 from ABB based on KNX


Generation
Boiler
T
T
Setpoint Boiler 0-10 V, Pump/
Boiler on/off, Status, Failure,
Flow and return flow temp.
Boiler/Chiller Interface BCI/S 1.1.1
KNX

Boiler/Chiller Interface BCI/S 1.1.1

Introduction

Motivation – New Features

- Control of a Boiler/Chiller and the main pump NEW
- Control of necessary water temperature (set point) in the boiler/chiller via 0-10V
- Turn on/off of boiler/chiller
- Turn on/off of pump of the main heating/cooling circuit
- Measurement of flow- and return flow temperature
- No controller inside, it‘s an interface, therefore no interference with the internal safety mechanism of the boiler or chiller unit
- The main intelligence (especially to provide the right control value) is located in the Application Controller AC/S (ASM‘s Boiler Heat generator and Chiller)

- Availability: August 2018

ABB
BCI/S 1.1.1
ABB i-bus®
KNX
0.6 Nm
0-10V

Application Controller AC/S 1.x.1

Introduction

Why Application Controller in a HVAC System?

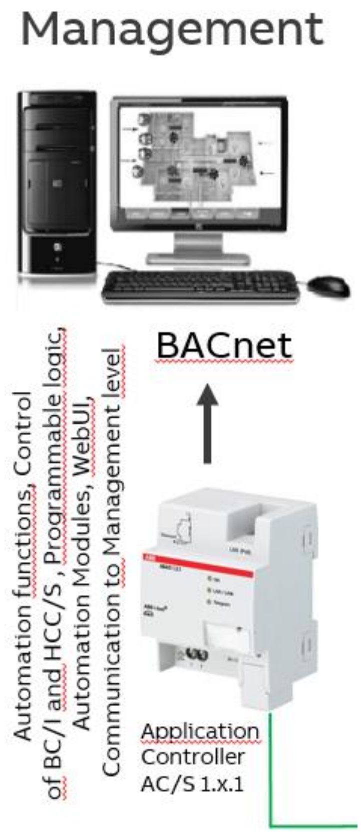
In a heating/cooling system a superior intelligent unit is required for numerous tasks

Functions like controller capability, collecting and processing data, mathematical functions, interfacing, calculation of control values or displaying and setting of states via web browser belong to it

Device needs connection to KNX and Ethernet, but has no physical In- and Outputs

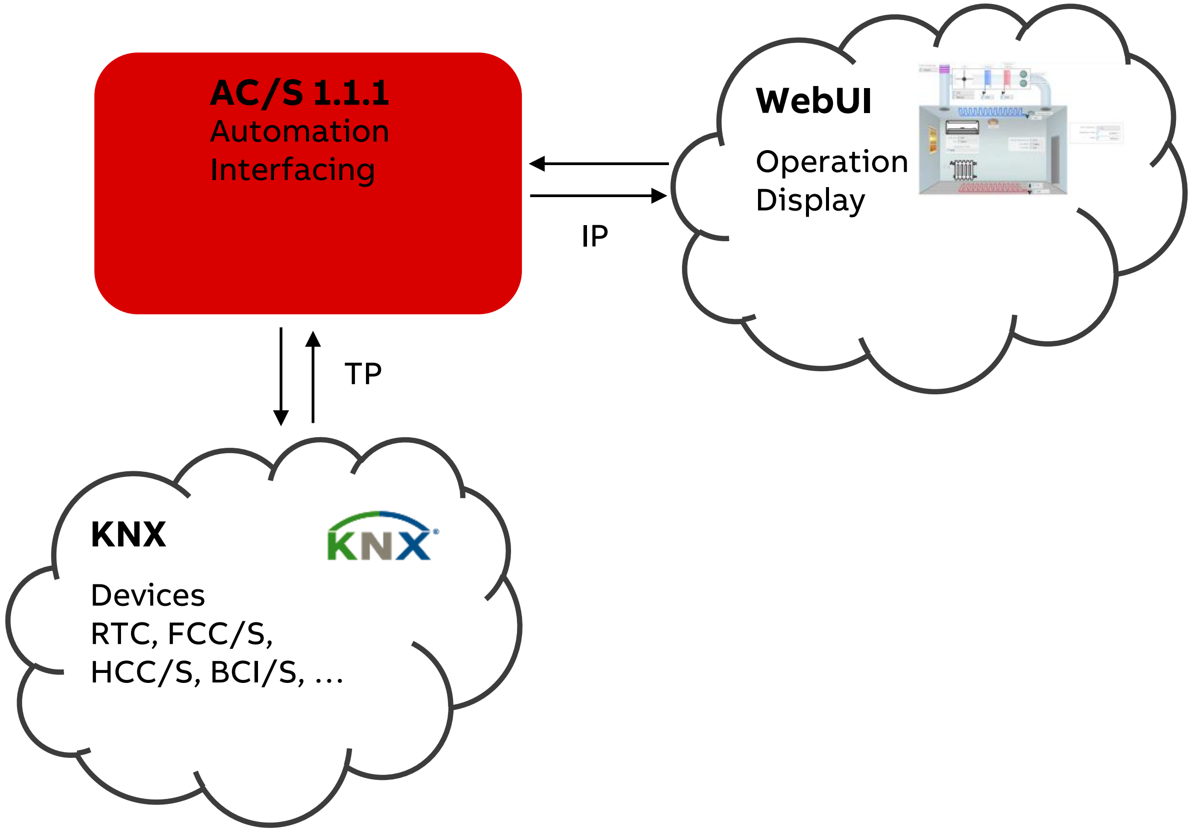
As in many HVAC systems BACnet is used, therefore an optional BACnet interface is essential

→ For a holistic approach AC/S 1.x.1 with or without BACnet interface from ABB based on KNX


Management
BACnet
Automation functions, Control of BC/I and HCC/S , Programmable logic, Automation Modules, WebUI, Communication to Management level
Application Controller AC/S 1.x.1

Application Controller AC/S 1.x.1

Principle



AC/S 1.1.1
Automation
Interfacing

IP

WebUI

Operation
Display

TP

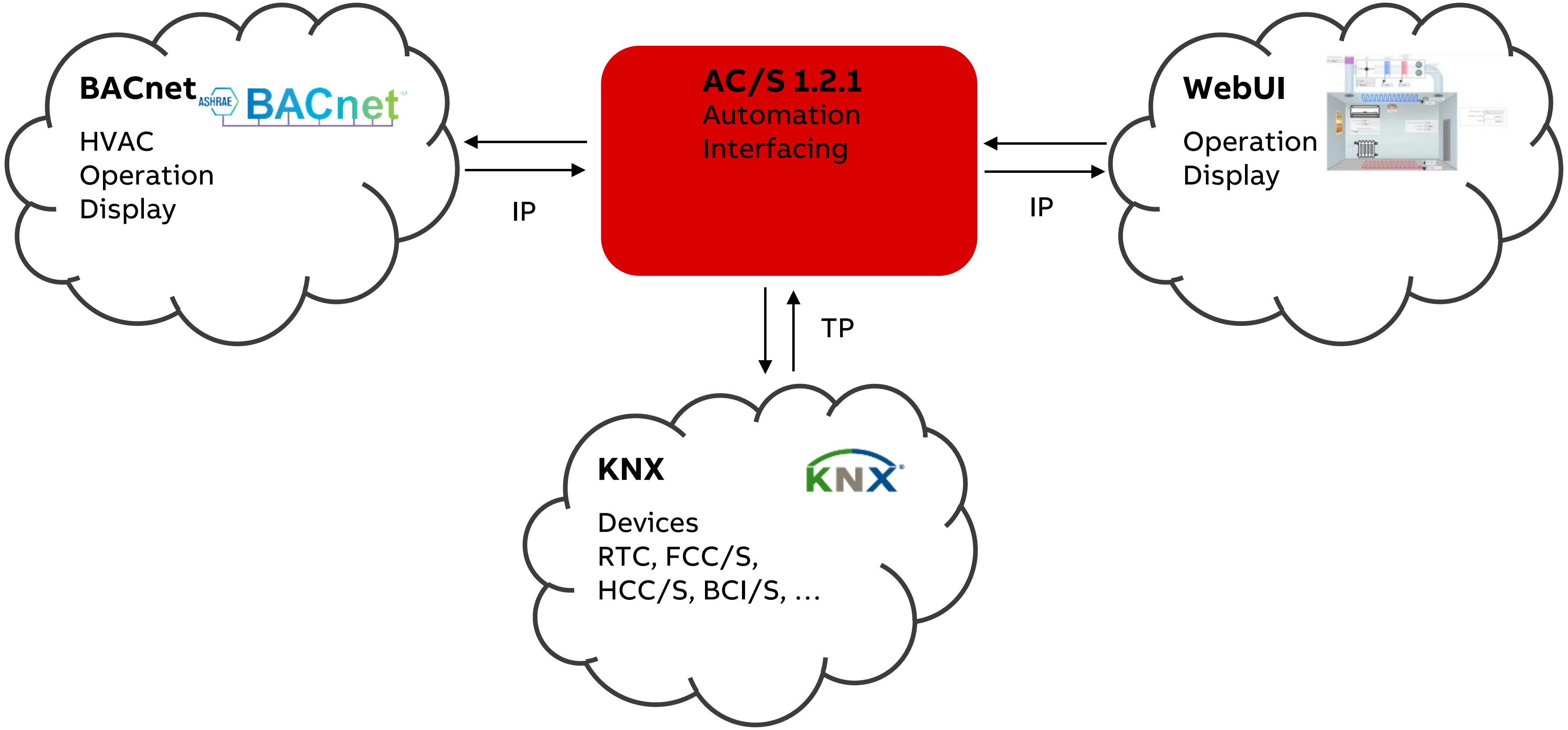
KNX

Devices
RTC, FCC/S,
HCC/S, BCI/S, …

©ABB

Application Controller AC/S 1.x.1

Principle



BACnet

HVAC
Operation
Display

AC/S 1.2.1
Automation
Interfacing

WebUI

Operation
Display

KNX

Devices
RTC, FCC/S,
HCC/S, BCI/S, …

ASHRAE
BACnet
IP
IP
TP
KNX

©ABB

Application Controller AC/S 1.x.1

Introduction

Motivation – New Features

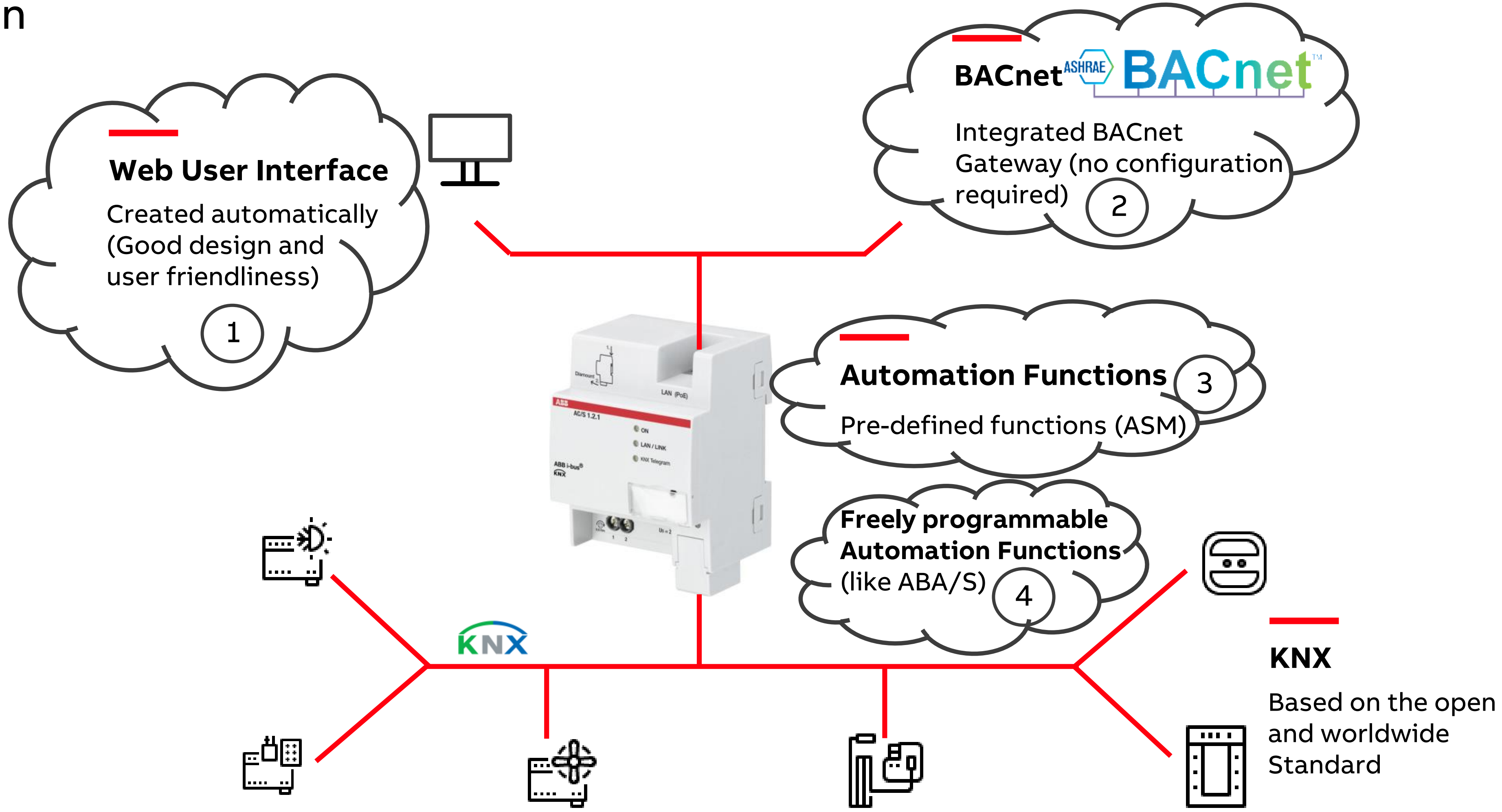
- Control of the complete HVAC system from consumption to generation NEW
- Managing the boiler/chiller
- Managing the Heating/Cooling circuit control
- Necessary for for a consistent solution of a HVAC system completly with ABB i-bus KNX which is demanded from customers and in projects

- Availability: September 2018

1.
Dismount
2.
LAN (PoE)
ABB
AC/S 1.2.1
ON
LAN / LINK
KNX Telegram
ABB i-bus®
KNX
0.6 Nm
1
2
Us = 2

Application Controller AC/S 1.x.1

Introduction



Web User Interface

Created automatically (Good design and user friendliness)

①

BACnet

Integrated BACnet Gateway (no configuration required)

②

Automation Functions ③

Pre-defined functions (ASM)

Freely programmable Automation Functions

(like ABA/S)

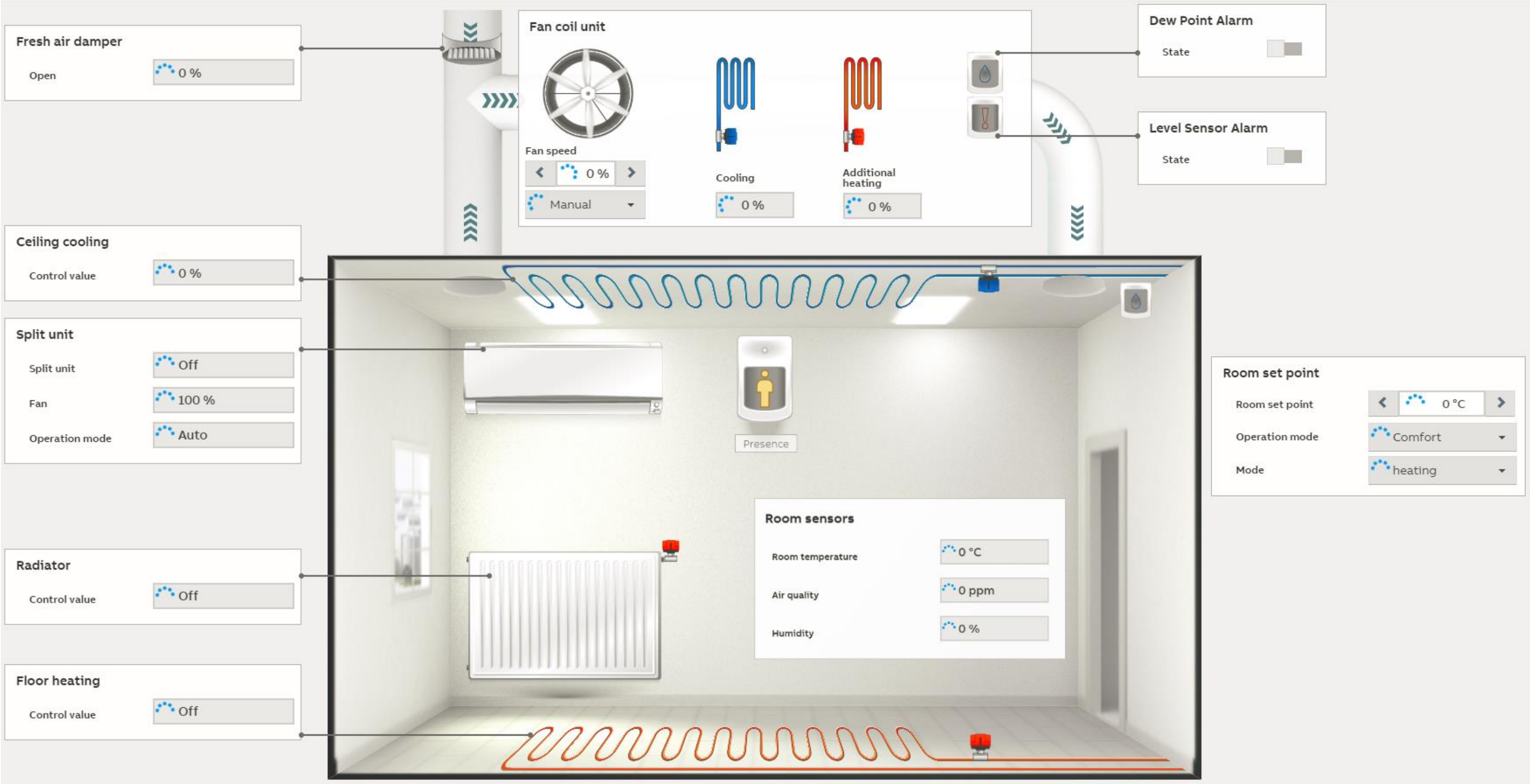
④

KNX

Based on the open and worldwide Standard

ClimaECO

Application Controller and WebUI



Fresh air damper

Open 0 %

Fan coil unit

Fan speed 0 %

Manual

Cooling 0 %

Additional heating 0 %

Dew Point Alarm

State

Level Sensor Alarm

State

Ceiling cooling

Control value 0 %

Split unit

Split unit Off

Fan 100 %

Operation mode Auto

Radiator

Control value Off

Floor heating

Control value Off

Presence

Room sensors

Room temperature 0 °C

Air quality 0 ppm

Humidity 0 %

Room set point

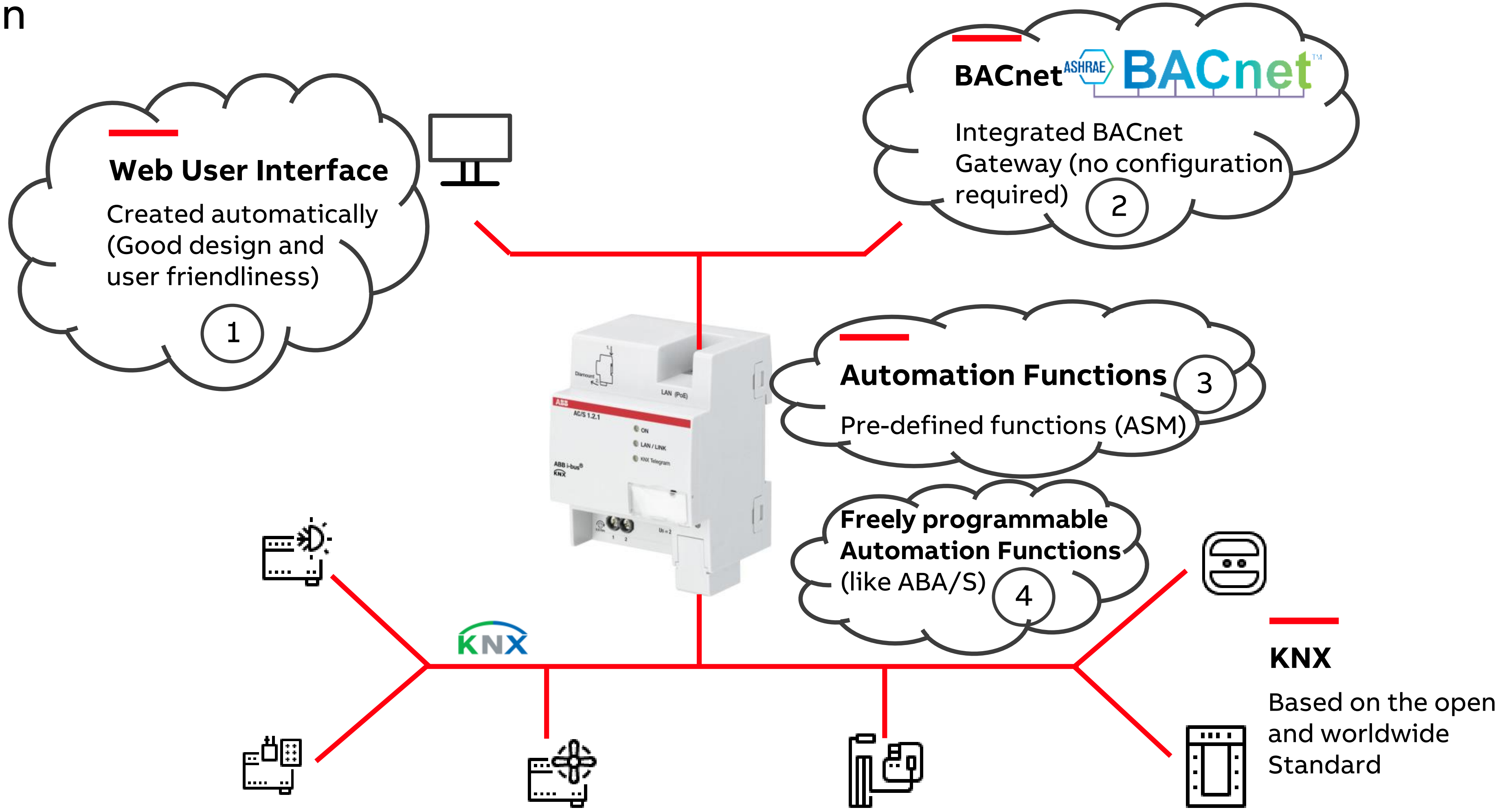
Room set point 0 °C

Operation mode Comfort

Mode heating

Application Controller AC/S 1.x.1

Introduction



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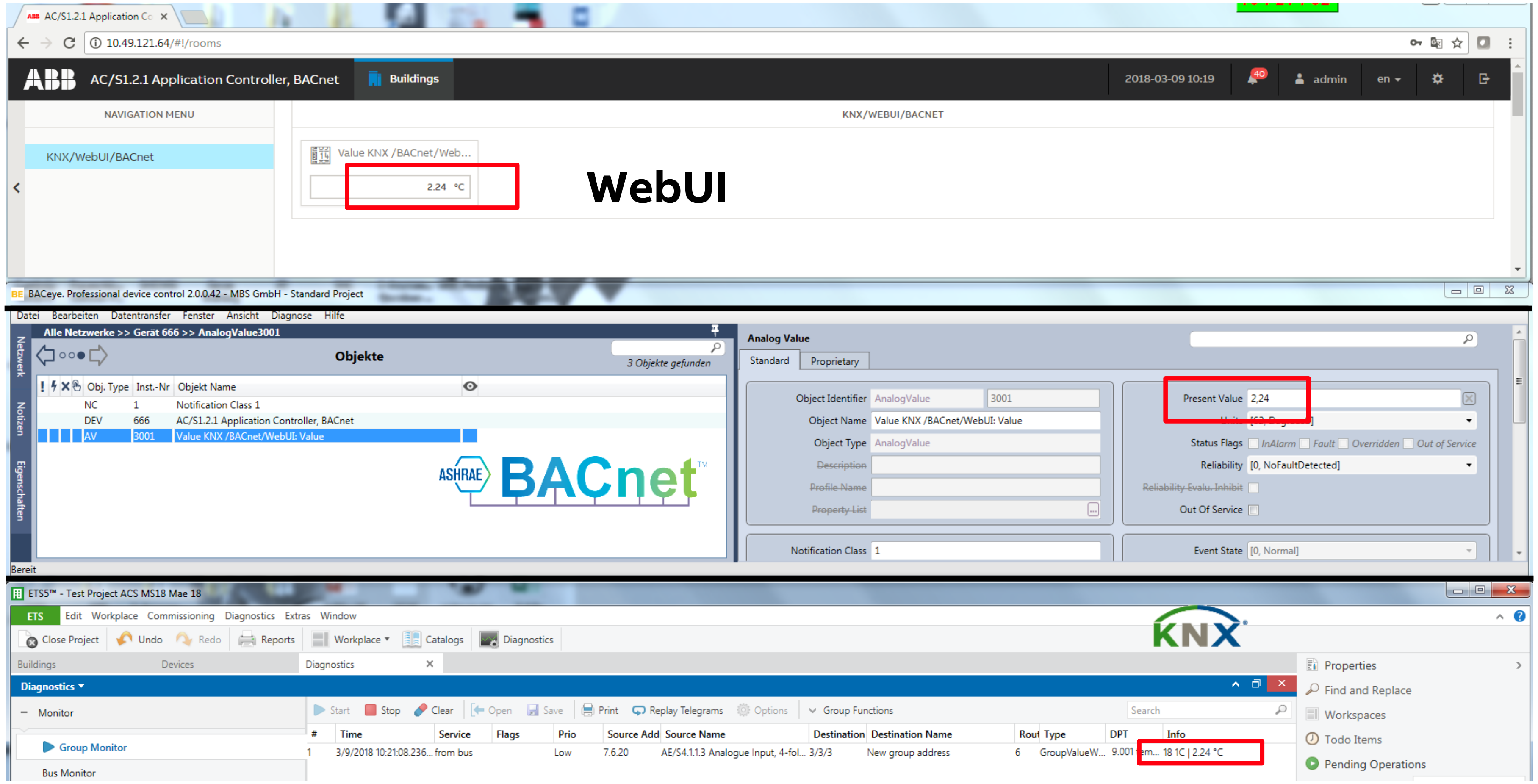
Based on the open and worldwide Standard

Application Controller AC/S 1.x.1

Communication in all Directions → KNX - WebUI - BACnet


WebUI
AC/S1.2.1 Application Co
10.49.121.64/#!/rooms
AC/S1.2.1 Application Controller, BACnet
Buildings
2018-03-09 10:19
admin
en
NAVIGATION MENU
KNX/WebUI/BACnet
KNX/WEBUI/BACNET
BACeye. Professional device control 2.0.0.42 - MBS GmbH - Standard Project
Datei Bearbeiten Datentransfer Fenster Ansicht Diagnose Hilfe
Netzwerk
Notizen
Eigenschaften
Objekte
Bereit
ASHRAE BACnet
ETS5™ - Test Project ACS MS18 Mae 18
ETS Edit Workplace Commissioning Diagnostics Extras Window
Close Project Undo Redo Reports Workplace Catalogs Diagnostics
Buildings Devices Diagnostics
Diagnostics
Monitor
Group Monitor
Bus Monitor
Start Stop Clear Open Save Print Replay Telegrams Options Group Functions
Search
KNX
Properties
Find and Replace
Workspaces
Todo Items
Pending Operations

Value KNX /BACnet/Web...

2.24 °C

Alle Netzwerke >> Gerät 666 >> AnalogValue3001

3 Objekte gefunden

Obj. Type	Inst.-Nr	Objekt Name
NC	1	Notification Class 1
DEV	666	AC/S1.2.1 Application Controller, BACnet
AV	3001	Value KNX /BACnet/WebUI: Value

Analog Value

Standard | Proprietary

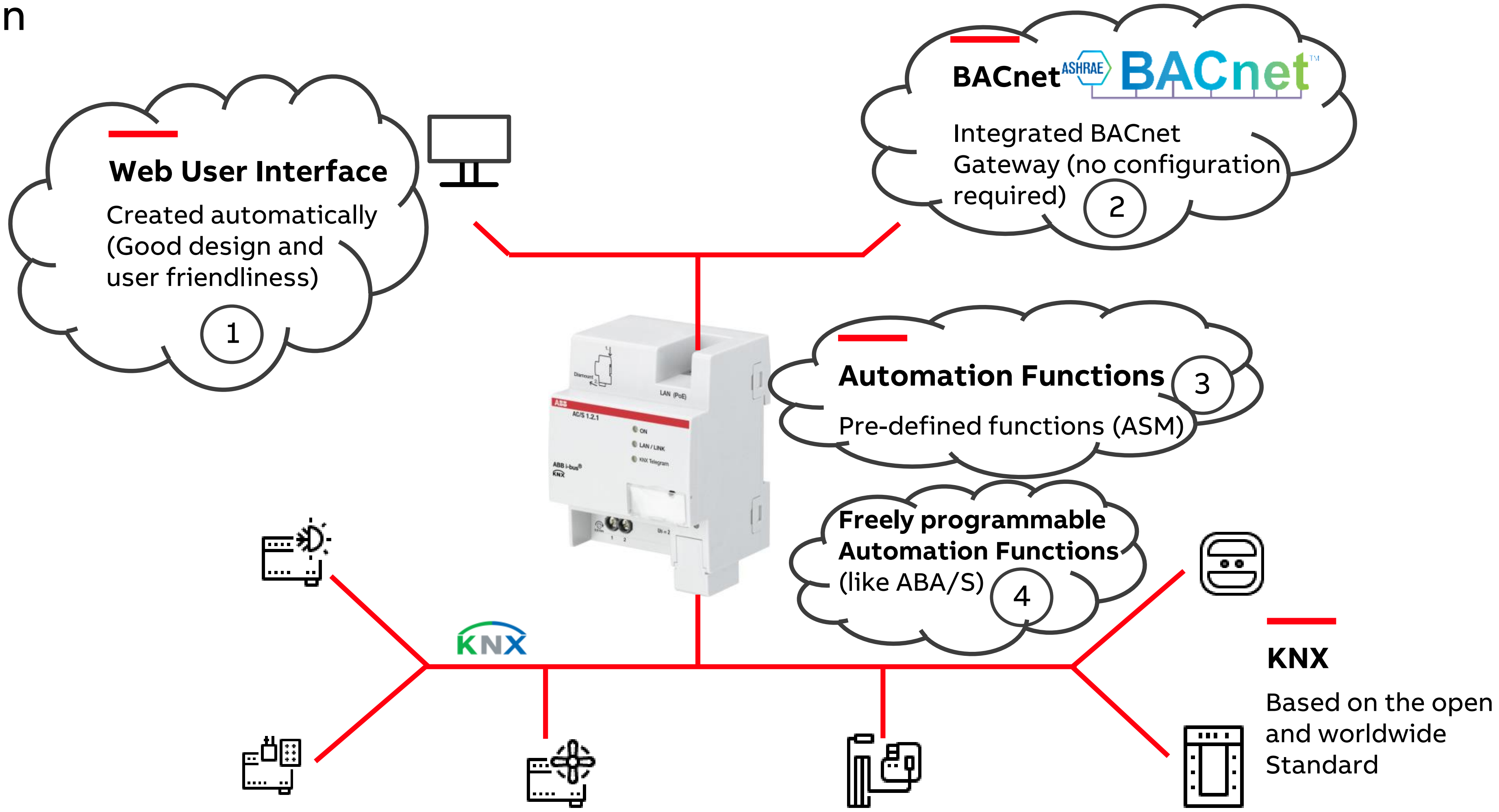
Object Identifier: AnalogValue 3001
Object Name: Value KNX /BACnet/WebUI: Value
Object Type: AnalogValue
~~Description~~:
~~Profile Name~~:
~~Property List~~:
Notification Class: 1

Present Value: 2,24
Status Flags: ☐ InAlarm ☐ Fault ☐ Overridden ☐ Out of Service
Reliability: [0, NoFaultDetected]
~~Reliability Evalu. Inhibit~~ ☐
Out Of Service ☐
Event State: [0, Normal]

#	Time	Service	Flags	Prio	Source Add	Source Name	Destination	Destination Name	Rout	Type	DPT	Info
1	3/9/2018 10:21:08.236...	from bus		Low	7.6.20	AE/S4.1.1.3 Analogue Input, 4-fol...	3/3/3	New group address	6	GroupValueW...	9.001	em... 18 1C | 2.24 °C

Application Controller AC/S 1.x.1

Introduction



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(like ABA/S)

④

KNX

Based on the open and worldwide Standard

©ABB

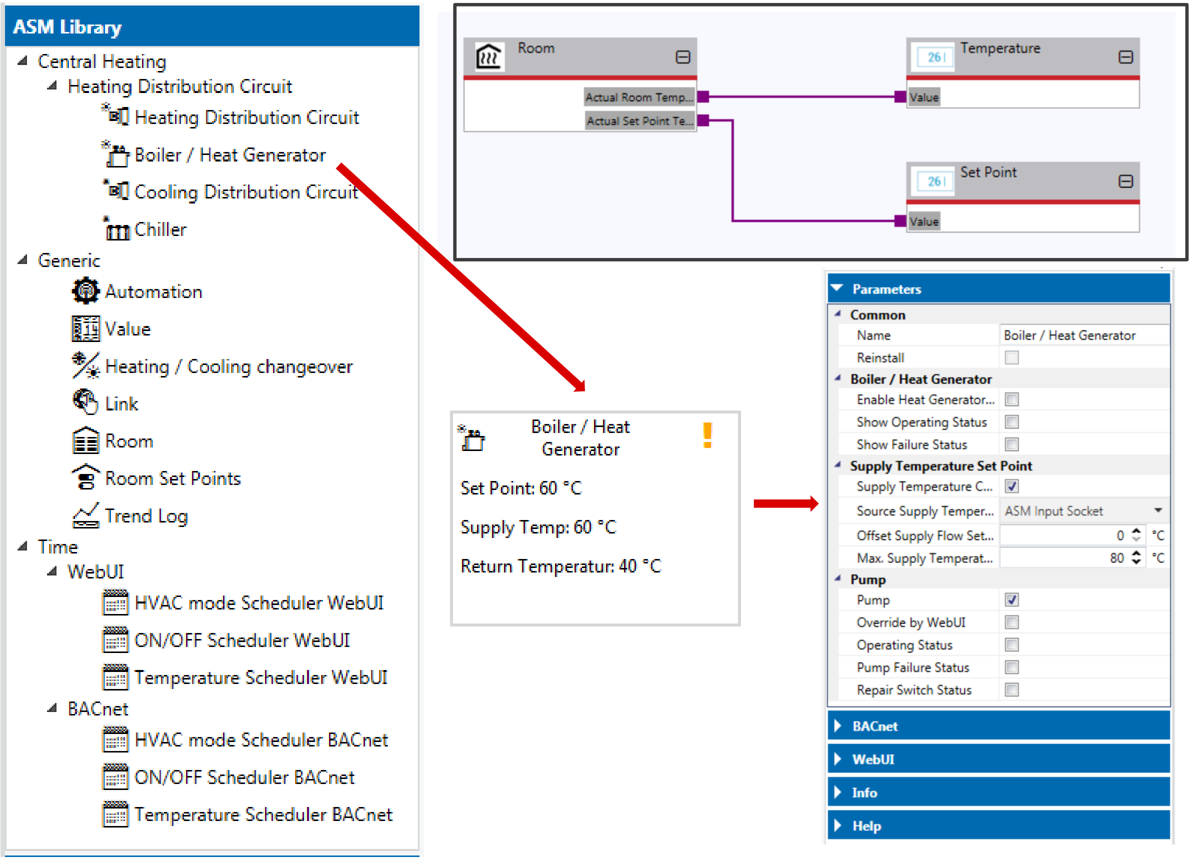
Application Controller AC/S 1.x.1

Introduction

Motivation – New Features

Predefined Automation Modules

- ASM –> **A**utomation **S**pecific **M**odules
- Represent specific functionality, can execute function by itself or together with other ASM's e.g. room setpoints or heating/cooling circuit control
  - In- and/or outputs (sockets)
  - Parameters
  - Group objects
  - Linking view with sockets to be connected to KNX objects, WebUI, BACnet or other ASM's



ASM Library

- Central Heating
  - Heating Distribution Circuit
    - Heating Distribution Circuit
    - Boiler / Heat Generator
    - Cooling Distribution Circuit
    - Chiller
- Generic
  - Automation
  - Value
  - Heating / Cooling changeover
  - Link
  - Room
  - Room Set Points
  - Trend Log
- Time
  - WebUI
    - HVAC mode Scheduler WebUI
    - ON/OFF Scheduler WebUI
    - Temperature Scheduler WebUI
  - BACnet
    - HVAC mode Scheduler BACnet
    - ON/OFF Scheduler BACnet
    - Temperature Scheduler BACnet

Boiler / Heat Generator

Set Point: 60 °C

Supply Temp: 60 °C

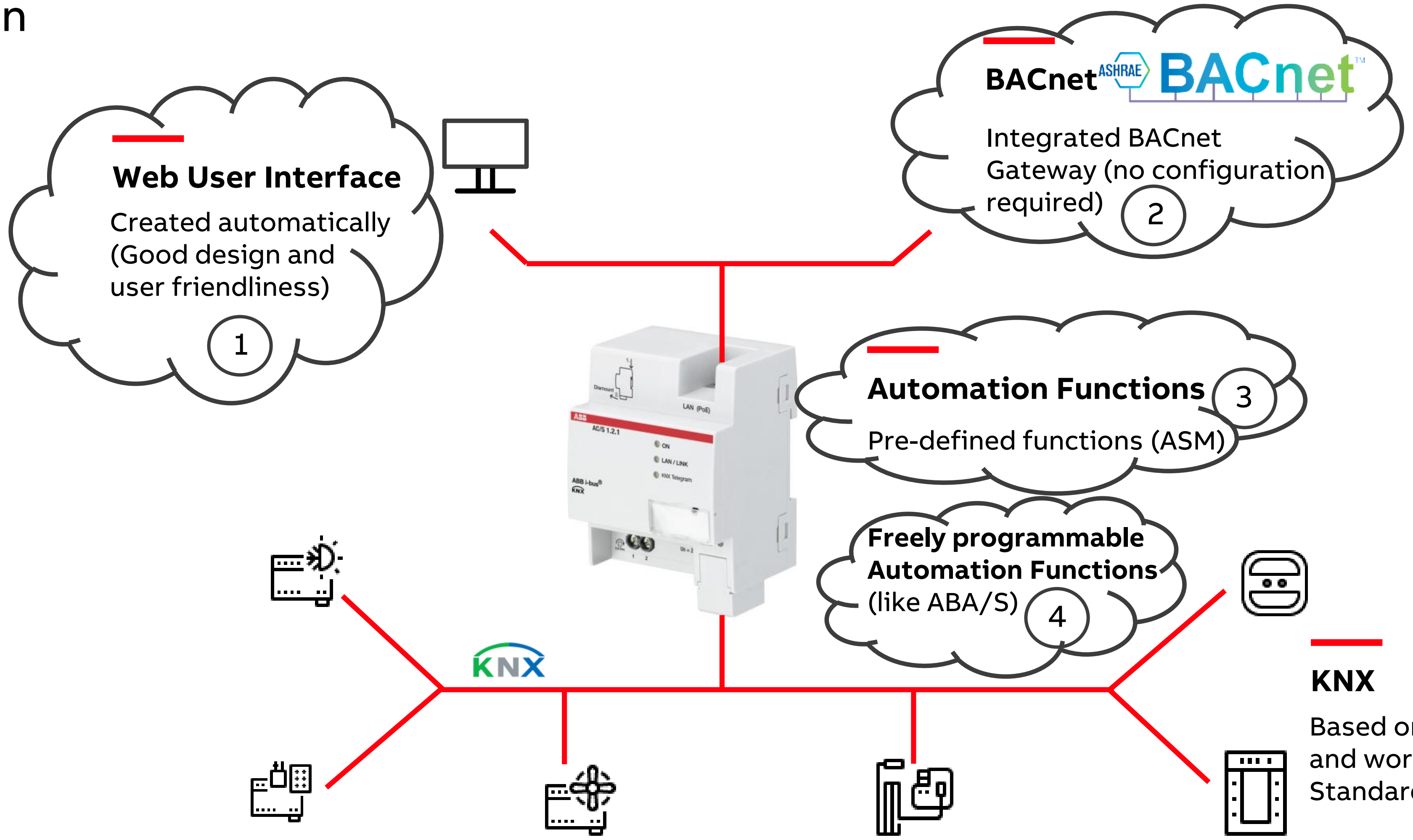
Return Temperatur: 40 °C

Parameters

Common	
Name	Boiler / Heat Generator
Reinstall	☐
Boiler / Heat Generator	
Enable Heat Generator...	☐
Show Operating Status	☐
Show Failure Status	☐
Supply Temperature Set Point	
Supply Temperature C...	☑
Source Supply Temper...	ASM Input Socket
Offset Supply Flow Set...	0 °C
Max. Supply Temperat...	80 °C
Pump	
Pump	☑
Override by WebUI	☐
Operating Status	☐
Pump Failure Status	☐
Repair Switch Status	☐

Application Controller AC/S 1.x.1

Introduction



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KNX

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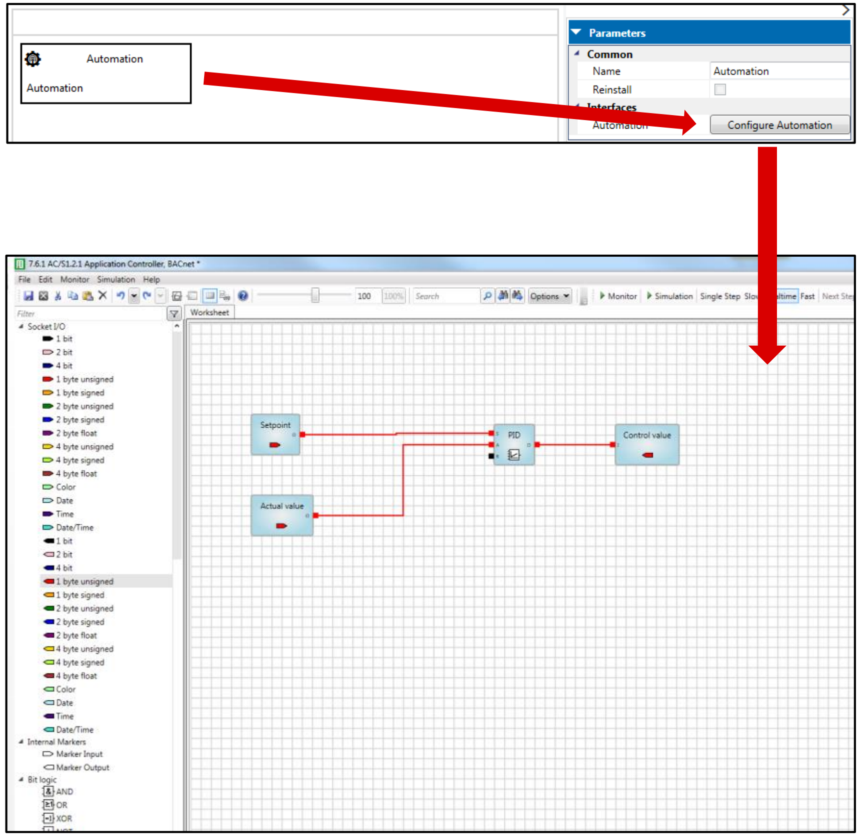
Application Controller AC/S 1.x.1

Introduction

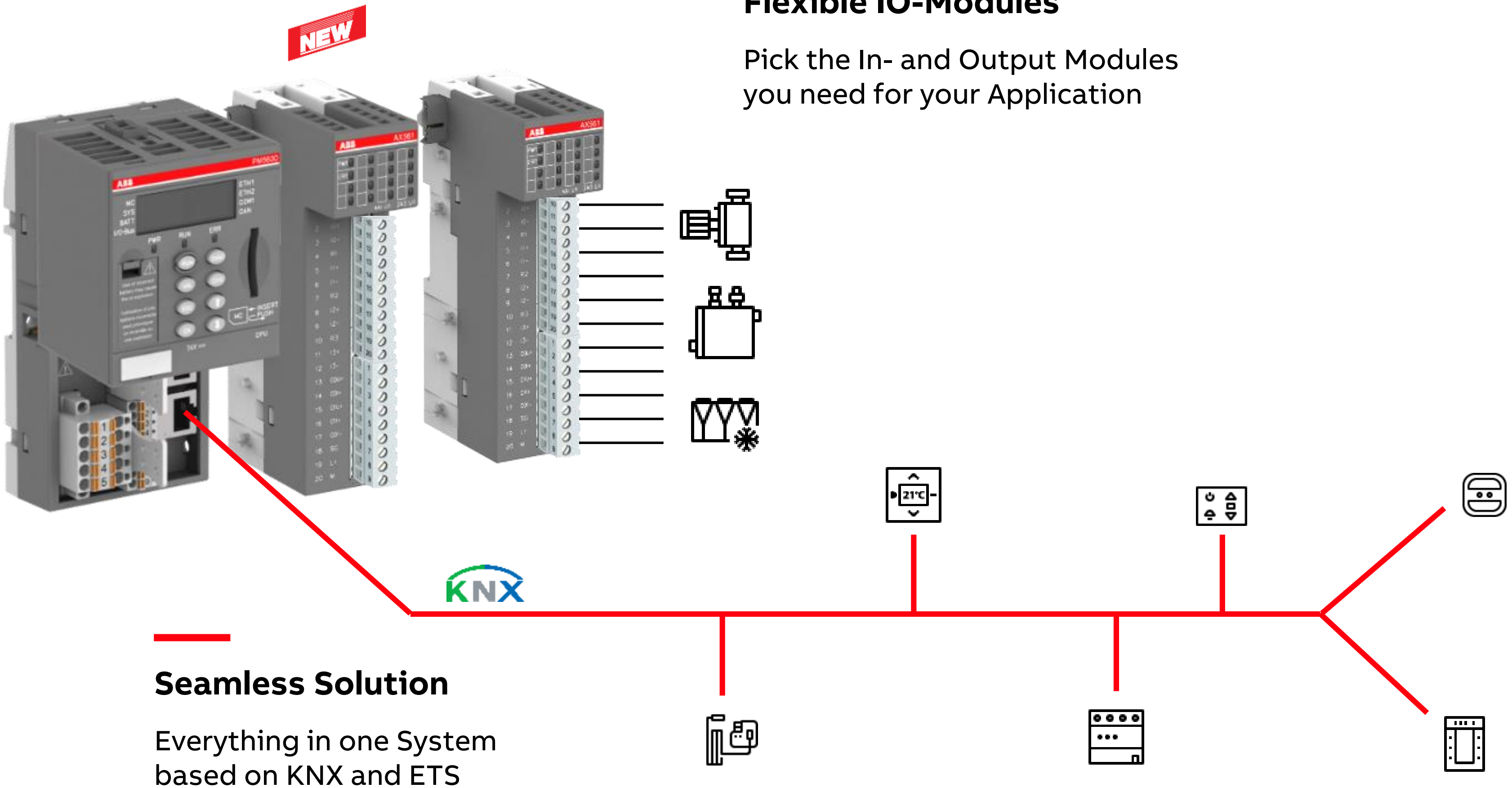
Motivation – New Features

ASM Automation: Freely programmable like Logic Controller ABA/S 1.2.1


Automation
Automation
Parameters
Common
Name
Automation
Reinstall
Interfaces
Automation
Configure Automation
7.6.1 AC/S1.2.1 Application Controller, BACnet *
File Edit Monitor Simulation Help
Options
Monitor
Simulation
Single Step
Fast
Filter
Worksheet
Socket I/O
1 bit
2 bit
4 bit
1 byte unsigned
1 byte signed
2 byte unsigned
2 byte signed
2 byte float
4 byte unsigned
4 byte signed
4 byte float
Color
Date
Time
Date/Time
Internal Markers
Marker Input
Marker Output
Bit logic
AND
OR
XOR
Setpoint
Actual value
PID
Control value

BAC/S 1.5.1 Building Automation Controller KNX

Introduction



Flexible IO-Modules

Pick the In- and Output Modules
you need for your Application

Freely Programmable

Easy creation and reuse
of Automation Software by
standardized Programming
Language

Seamless Solution

Everything in one System
based on KNX and ETS

©ABB

BAC/S 1.5.1 Building Automation Controller KNX

Introduction

Freely Programmable

- Advanced Programming based on standardized IEC 61131-3 Programming Languages in ABB Automation Builder based on established CODESYS Software
- Easy reuse of your existing CODESYS based Projects
- Easy use of 3rd Party IEC 61131-3 Automation Software Libraries

Automation Builder

ABB Automation Builder

CODESYS

+

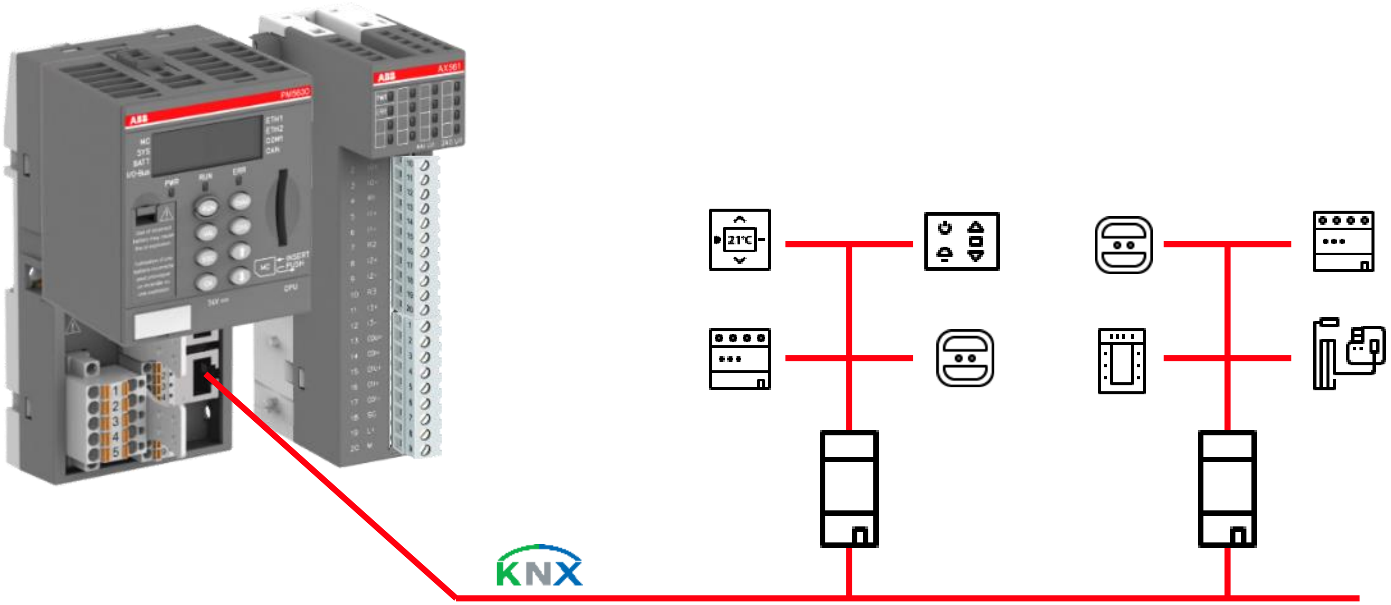
ETS
PROFESSIONAL
5ETS

BAC/S 1.5.1 Building Automation Controller KNX

Introduction

KNX

- Seamless Solution from Automation Controllers to Room Automation. No Gateways and Integration Effort required
- Integrated in KNX and ETS
  - Built-in KNX Interface based on KNXnet/IP (Ethernet) to connect to the KNX IP-Router Backbone
  - The BAC/S is a standard KNX Device with Group Objects in ETS and physical KNX Address
  - Direct data exchange between the Engineering Software ABB Automation Builder and ETS
- Availability: October 2018



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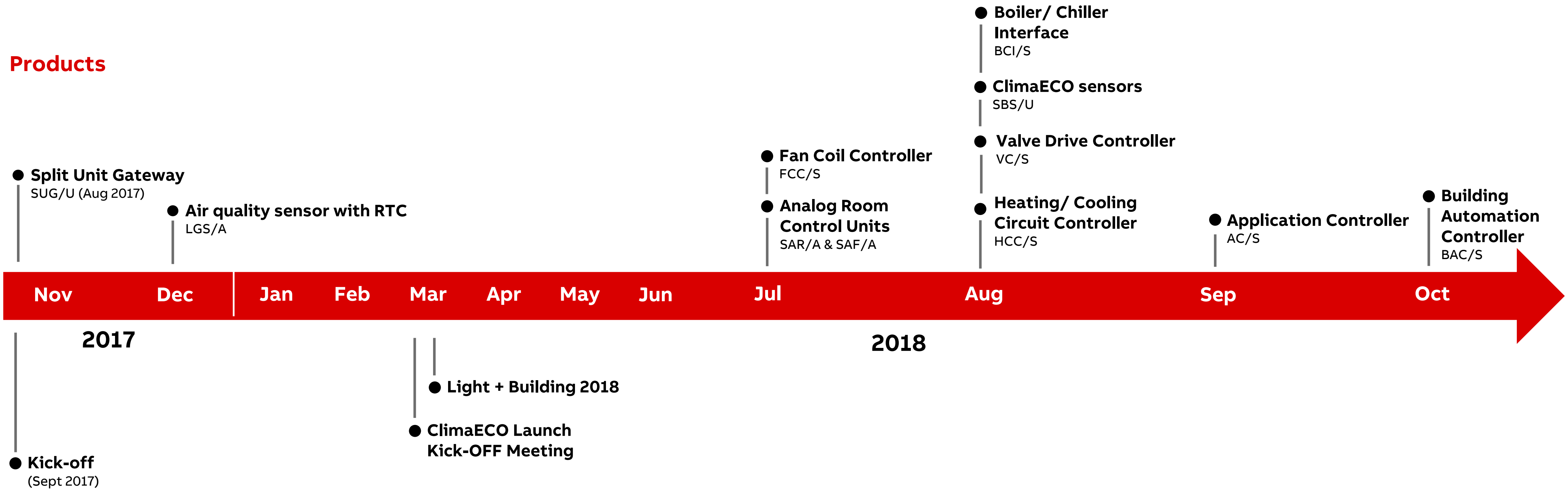
ClimaECO: ABB i-bus® KNX HVAC Solutions

Go-To-Market Timeline

Products



- **Split Unit Gateway** SUG/U (Aug 2017)
- **Air quality sensor with RTC** LGS/A
- **Fan Coil Controller** FCC/S
- **Analog Room Control Units** SAR/A & SAF/A
- **Boiler/ Chiller Interface** BCI/S
- **ClimaECO sensors** SBS/U
- **Valve Drive Controller** VC/S
- **Heating/ Cooling Circuit Controller** HCC/S
- **Application Controller** AC/S
- **Building Automation Controller** BAC/S

- **Kick-off** (Sept 2017)
- **ClimaECO Launch Kick-OFF Meeting**
- **Light + Building 2018**

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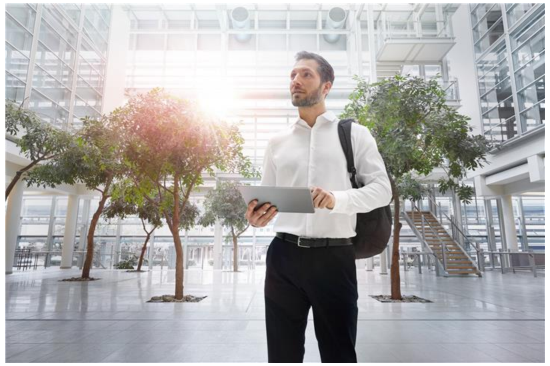
ClimaECO: ABB i-bus® KNX HVAC Solutions

Available content for ClimaECO

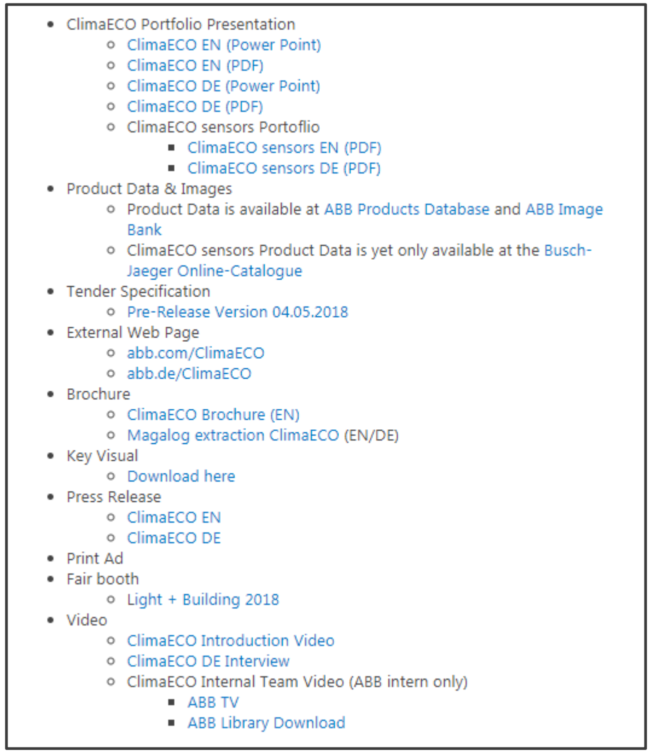
Available content **ABB internal**:

- Presentation ClimaECO (Overview)
- ABB-ClimaECO
- Specification Text (step by step)
  - FCC/S, VC/S, ABB-ClimaECO, AC/S (May 2018)
- Key Visual (Picture)
- Press Release
- Video – Questions and Answers

→ Link



ClimaECO
Questions and Answers about the new HVAC automation portfolio.



- ClimaECO Portfolio Presentation
  - ClimaECO EN (Power Point)
  - ClimaECO EN (PDF)
  - ClimaECO DE (Power Point)
  - ClimaECO DE (PDF)
  - ClimaECO sensors Portoflio
    - ClimaECO sensors EN (PDF)
    - ClimaECO sensors DE (PDF)
- Product Data & Images
  - Product Data is available at ABB Products Database and ABB Image Bank
  - ClimaECO sensors Product Data is yet only available at the Busch-Jaeger Online-Catalogue
- Tender Specification
  - Pre-Release Version 04.05.2018
- External Web Page
  - abb.com/ClimaECO
  - abb.de/ClimaECO
- Brochure
  - ClimaECO Brochure (EN)
  - Magalog extraction ClimaECO (EN/DE)
- Key Visual
  - Download here
- Press Release
  - ClimaECO EN
  - ClimaECO DE
- Print Ad
- Fair booth
  - Light + Building 2018
- Video
  - ClimaECO Introduction Video
  - ClimaECO DE Interview
  - ClimaECO Internal Team Video (ABB intern only)
    - ABB TV
    - ABB Library Download

ClimaECO: ABB i-bus® KNX HVAC Solutions

Available content for ClimaECO

Available content **external**:

- Web Page: www.abb.com/ClimaECO (EN)
- Web Page: www.abb.de/ClimaECO (DE)

- Video on Youtube: “ClimaECO – Heating Ventilation and Air Conditioning with ABB i-bus® KNX”
  → Link

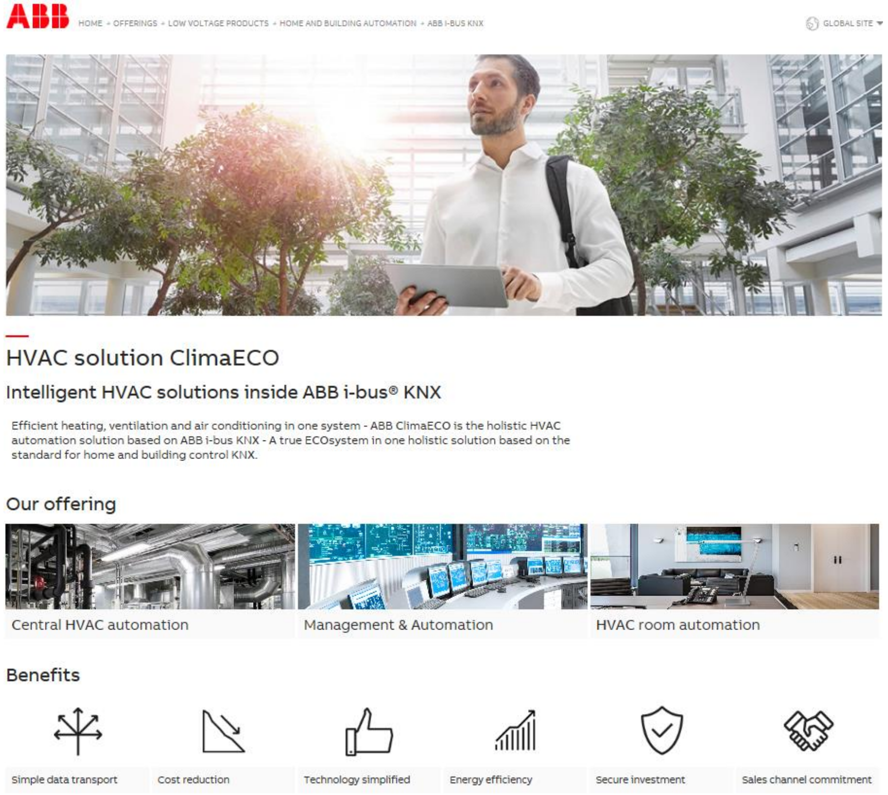


ABB
HOME › OFFERINGS › LOW VOLTAGE PRODUCTS › HOME AND BUILDING AUTOMATION › ABB I-BUS KNX
GLOBAL SITE

HVAC solution ClimaECO

Intelligent HVAC solutions inside ABB i-bus® KNX

Efficient heating, ventilation and air conditioning in one system - ABB ClimaECO is the holistic HVAC automation solution based on ABB i-bus KNX - A true ECOsystem in one holistic solution based on the standard for home and building control KNX.

Our offering

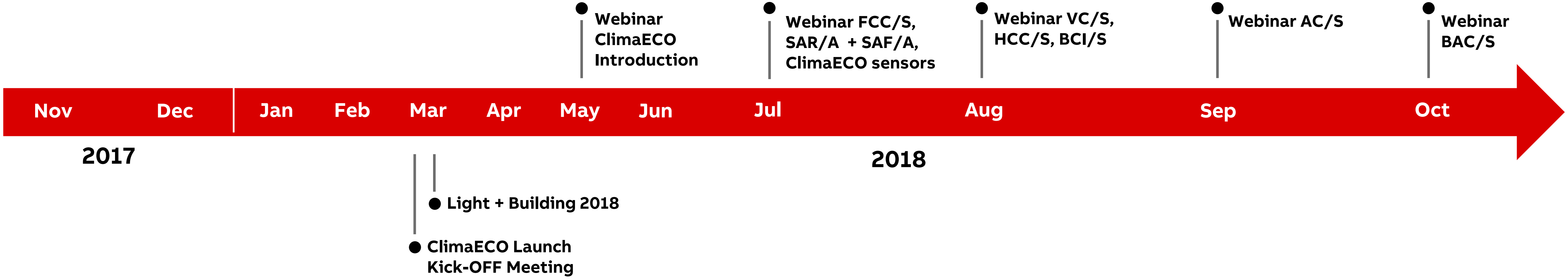
Central HVAC automation | Management & Automation | HVAC room automation

Benefits

Simple data transport | Cost reduction | Technology simplified | Energy efficiency | Secure investment | Sales channel commitment

ClimaECO: ABB i-bus® KNX HVAC Solutions

Training Timeline (Webinars)



Webinar ClimaECO Introduction
Webinar FCC/S, SAR/A + SAF/A, ClimaECO sensors
Webinar VC/S, HCC/S, BCI/S
Webinar AC/S
Webinar BAC/S
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
2017
2018
Light + Building 2018
ClimaECO Launch Kick-OFF Meeting

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ClimaECO: ABB i-bus® KNX HVAC Solutions

Training & Qualification Calendar 2018

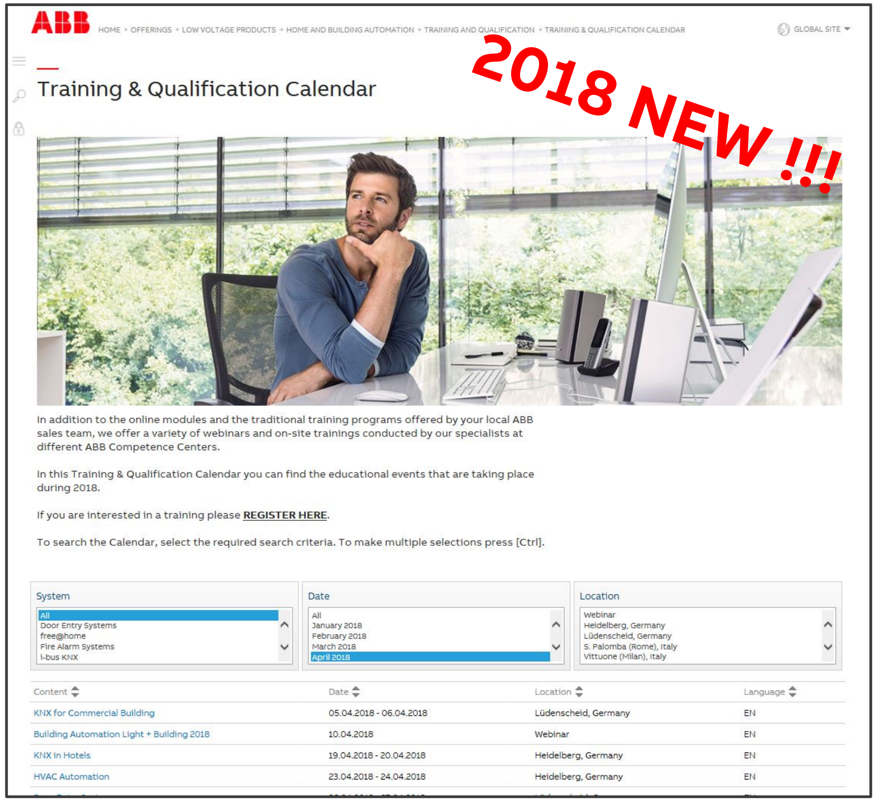
In addition to the online modules and the traditional training programs offered by your local ABB sales team, we offer a variety of on-site trainings conducted by our specialists at different ABB training facilities

In this Training & Qualification Calendar you can find the educational events that are taking place during 2018

If you are interested in a training please click the "REGISTER HERE" button

www.abb.com/knx or https://go.abb/ba-training

- → Training and Qualification
  - → Training Calendar


HOME › OFFERINGS › LOW VOLTAGE PRODUCTS › HOME AND BUILDING AUTOMATION › TRAINING AND QUALIFICATION › TRAINING & QUALIFICATION CALENDAR
GLOBAL SITE

2018 NEW !!!

Training & Qualification Calendar

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In this Training & Qualification Calendar you can find the educational events that are taking place during 2018.

If you are interested in a training please **REGISTER HERE**.

To search the Calendar, select the required search criteria. To make multiple selections press [Ctrl].

System
All
Door Entry Systems
free@home
Fire Alarm Systems
i-bus KNX
Date
All
January 2018
February 2018
March 2018
April 2018
Location
Webinar
Heidelberg, Germany
Lüdenscheid, Germany
S. Palomba (Rome), Italy
Vittuone (Milan), Italy

Content	Date	Location	Language
KNX for Commercial Building	05.04.2018 - 06.04.2018	Lüdenscheid, Germany	EN
Building Automation Light + Building 2018	10.04.2018	Webinar	EN
KNX in Hotels	19.04.2018 - 20.04.2018	Heidelberg, Germany	EN
HVAC Automation	23.04.2018 - 24.04.2018	Heidelberg, Germany	EN

ClimaECO: ABB i-bus® KNX HVAC Solutions

KNX Certified Training

Certified KNX Courses in Heidelberg

- Advanced Course 16th to 20th July
- Tutor Course 09th to 13th October

And many more training courses in the calendar "International Training Dates 2018"

www.abb.com/knx or https://go.abb/ba-training

PARTNER
KNX

Certified KNX Basic Course
February 2018 in Heidelberg

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ClimaECO: ABB i-bus® KNX HVAC Solutions

Next Webinar

KNX Security Panel GM/A 8.1

Wednesday 13th June 2018

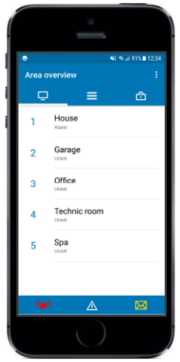
- Morning 09:00 am Europe Time (Berlin, UTC + 2h)
- Afternoon 03:00 pm Europe Time (Berlin, UTC + 2h)

Smartphone App

Remote access via “MyBuildings portal”

Service functionality

ABB
GM/A 8.1
ABB i-bus
KNX


Area overview
1 House
2 Garage
3 Office
4 Technic room
5 Spa

iOS

safe&smart

MyBuildings portal

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