

REXXHAB

Bringing 00REXX *into the* SMART HOME

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Netzsimulationen • Managementsysteme

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TODAY'S *Agenda*

#1

WHAT IS A
Smart Home?

#2

OPENHAB
Empowering the Smart Home

#3

OPENHAB
Demo

#4

REXXHAB
Implementation

#5

REXXHAB
Demo

#6

SUMMARY AND
Outlook

#1

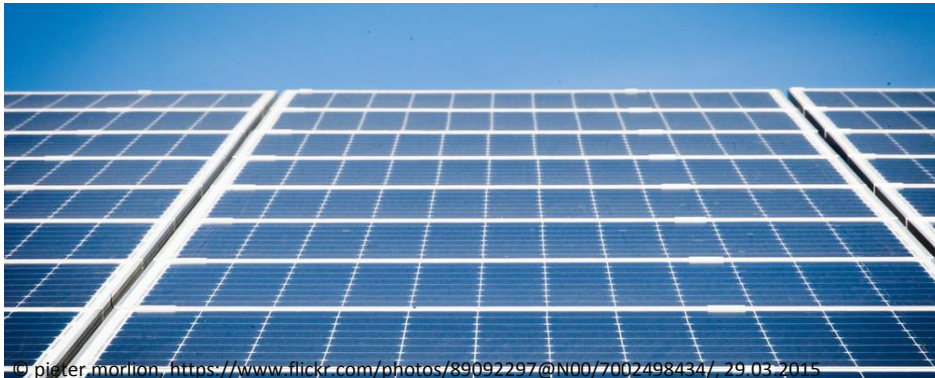
WHAT IS A
Smart Home?

What is a SMART HOME?



SPACE EFFICIENCY?

WASTE WATER RECYCLING?



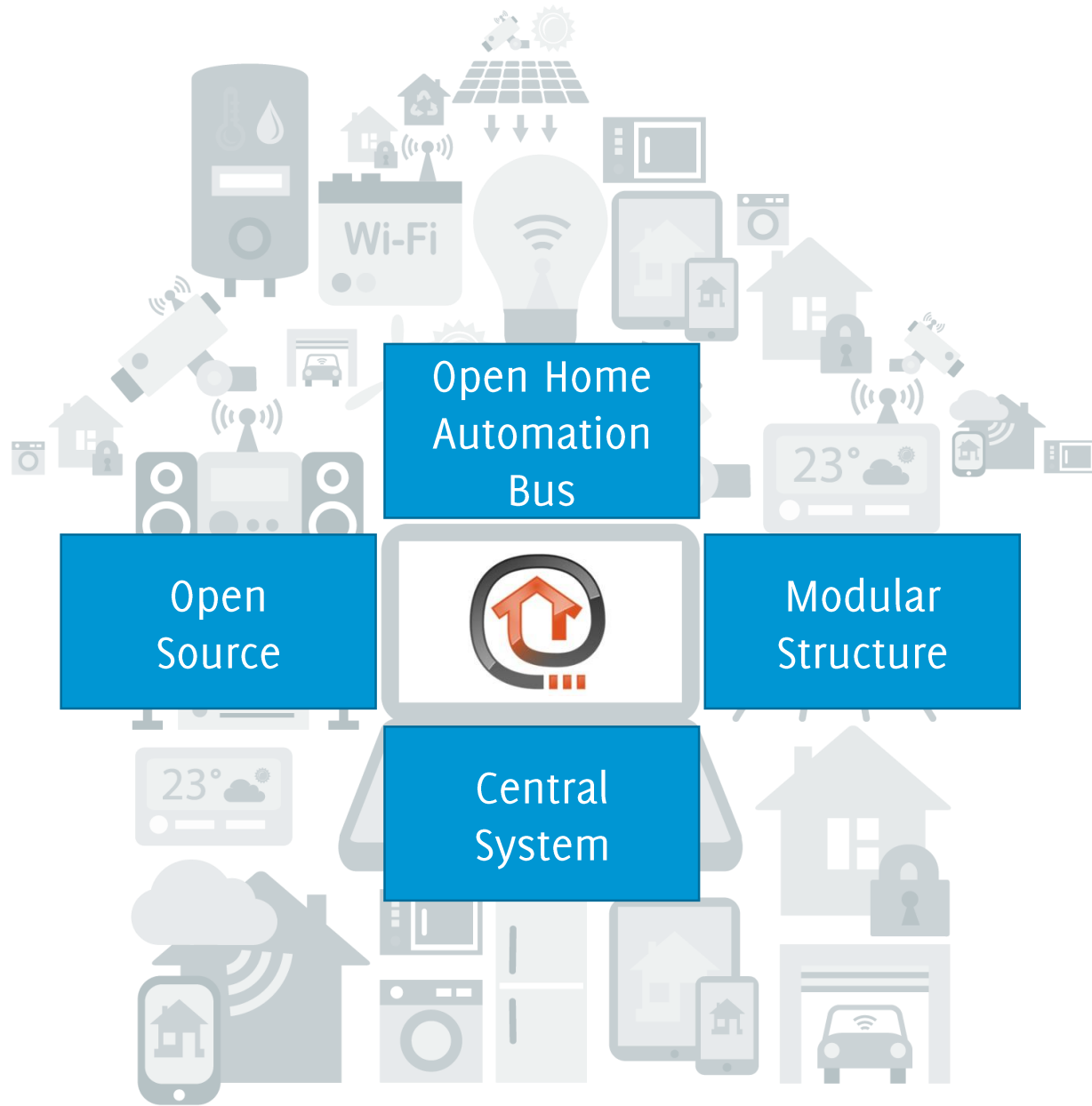
SOLAR POWER?



#2

OPENHAB

*Empowering the
Smart Home*

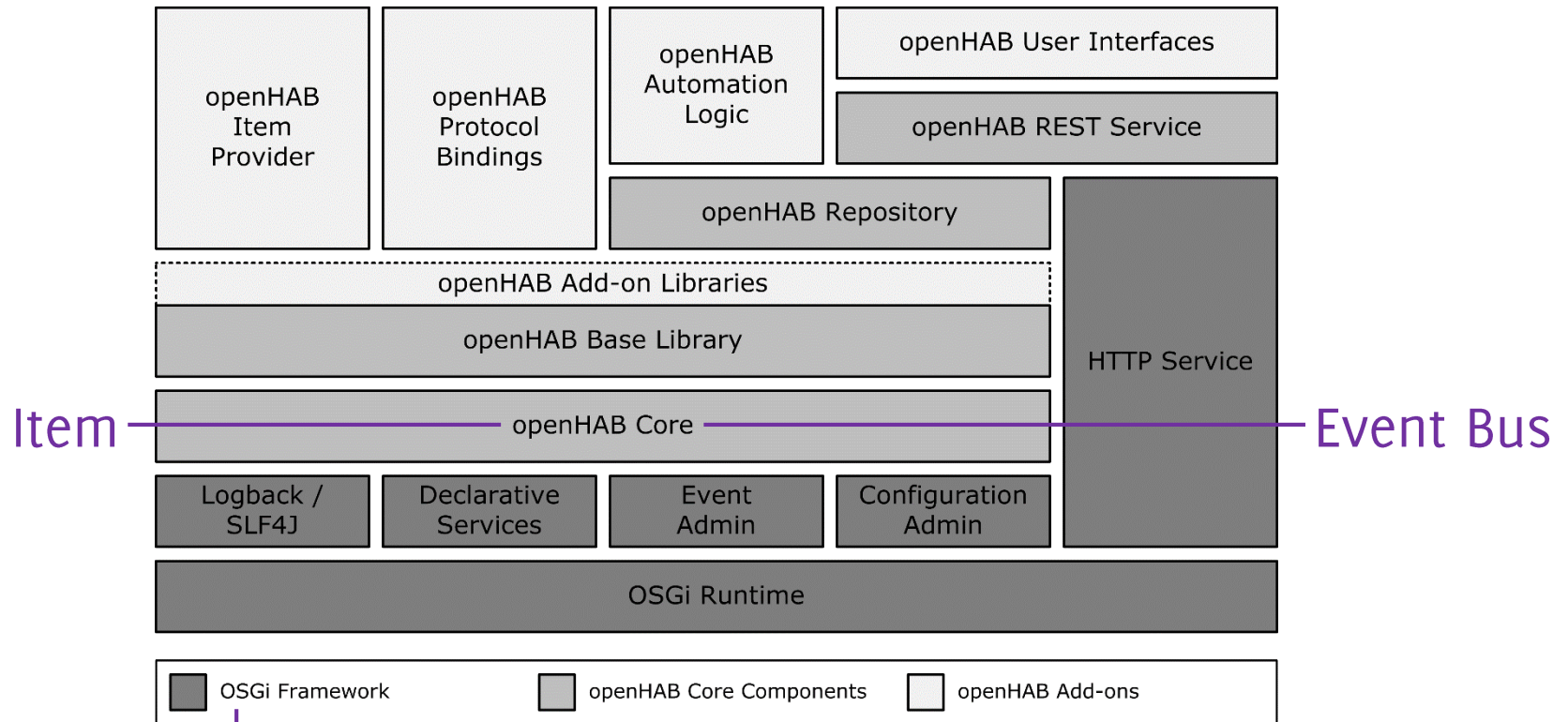


OPENHAB – EMPOWERING THE SMART HOME

OPENHAB - SUPPORTED PROTOCOLS

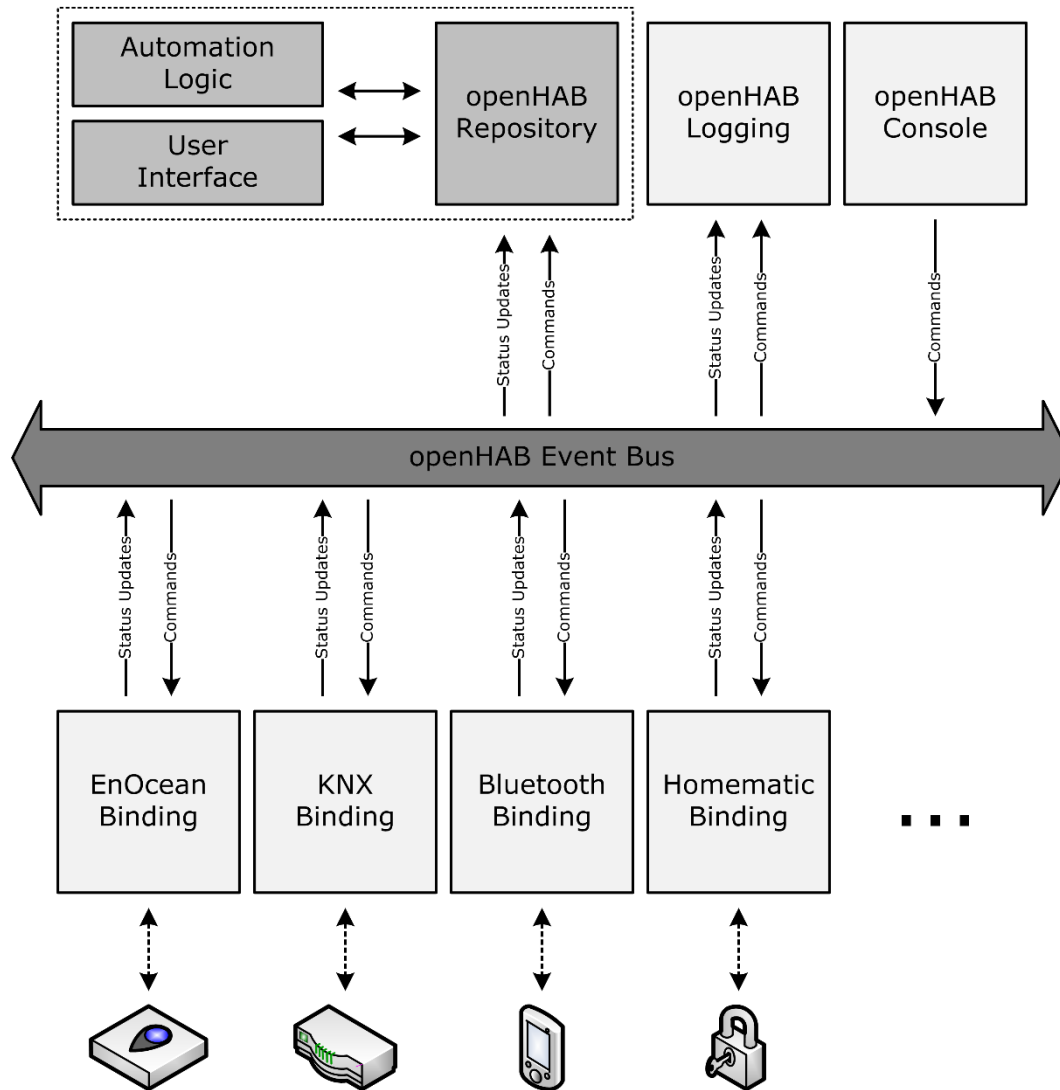


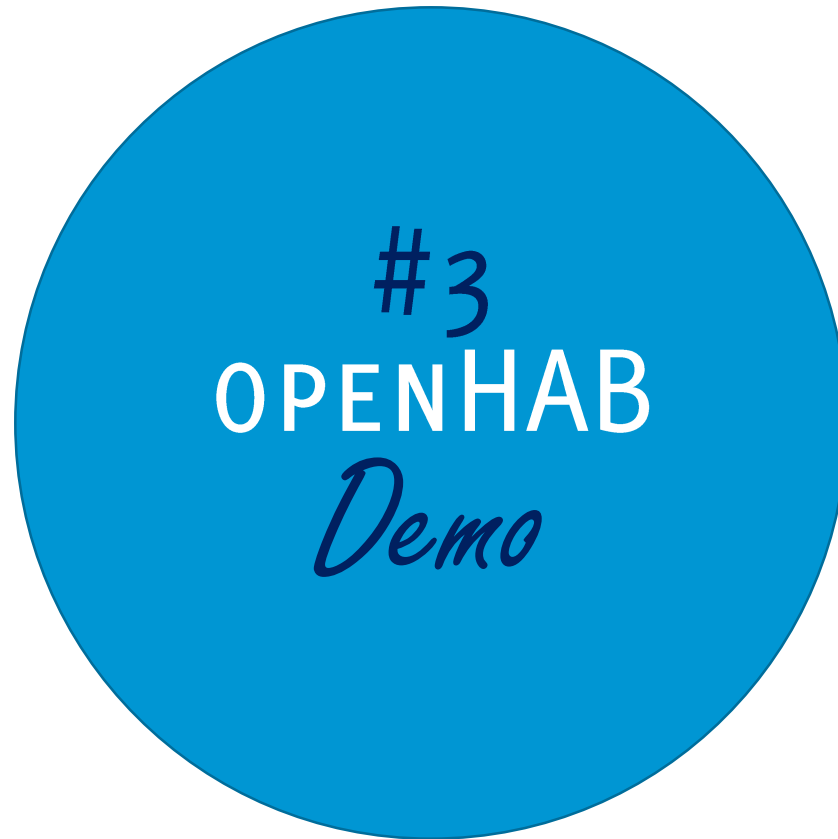
OPENHAB - ARCHITECTURE



Open Service Gateway initiative (OSGi)

OPENHAB – EVENT BUS



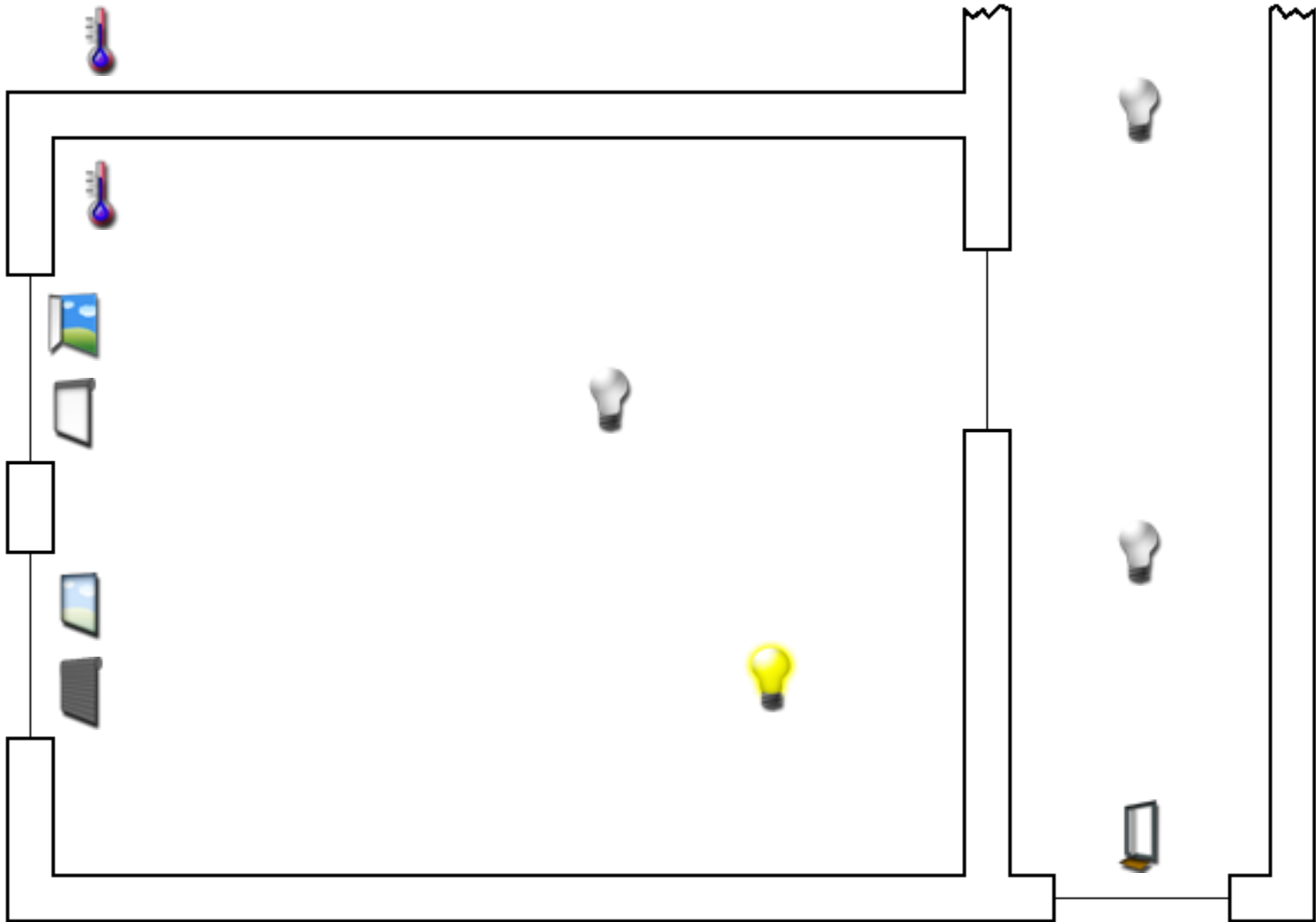


#3

OPENHAB

Demo

OPENHAB – DEMO HOUSE



DEMO HOUSE - CORRIDOR

```
1 Group g_corridor "Corridor" <corridor>
2
3 Switch light_corridor_ceiling_front "Ceiling Front" (g_corridor)
4 Switch light_corridor_ceiling_back "Ceiling Back" (g_corridor)
5
6 Contact door_corridor "Door" (g_corridor)
```

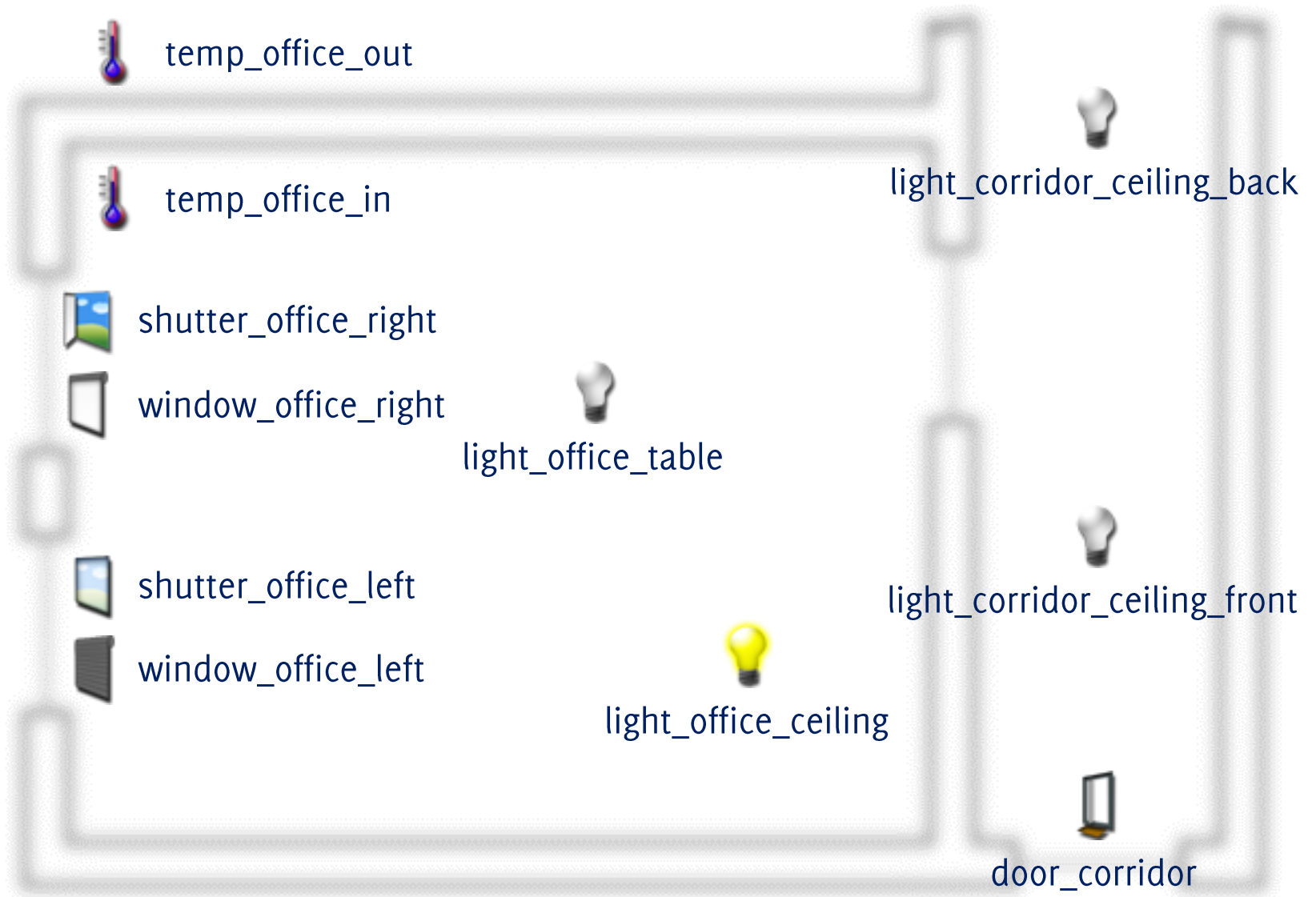
file: openHAB/configurations/items/DemoHouse.items

DEMO HOUSE - OFFICE

```
1 Group g_office "Office" <office>
2
3 Switch light_office_ceiling "Ceiling" (g_office)
4 Switch light_office_table "Table" (g_office)
5
6 Rollershutter shutter_office_left "Office Left" (g_office)
7 Rollershutter shutter_office_right "Office Right" (g_office)
8
9 Contact window_office_left "Office Left" (g_office)
10 Contact window_office_right "Office Right" (g_office)
11
12 Number temp_office_in "Indoor [%.1f °C]" <temperature> (g_office)
13 Number temp_office_out "Outdoor [%.1f °C]" <temperature> (g_office)
```

file: openHAB/configurations/items/DemoHouse.items

OPENHAB – DEMO HOUSE



DEMO HOUSE - VISUALIZATION

```
1 sitemap DemoHouse label="DemoHouse"  
2 {  
3     Frame  
4     {  
5         Group item=g_corridor label="Corridor" icon="corridor"  
6         Group item=g_office label="Office" icon="office"  
7     }  
8     [...]  
9 }
```

file: openHAB/configurations/sitemaps/default.sitemap

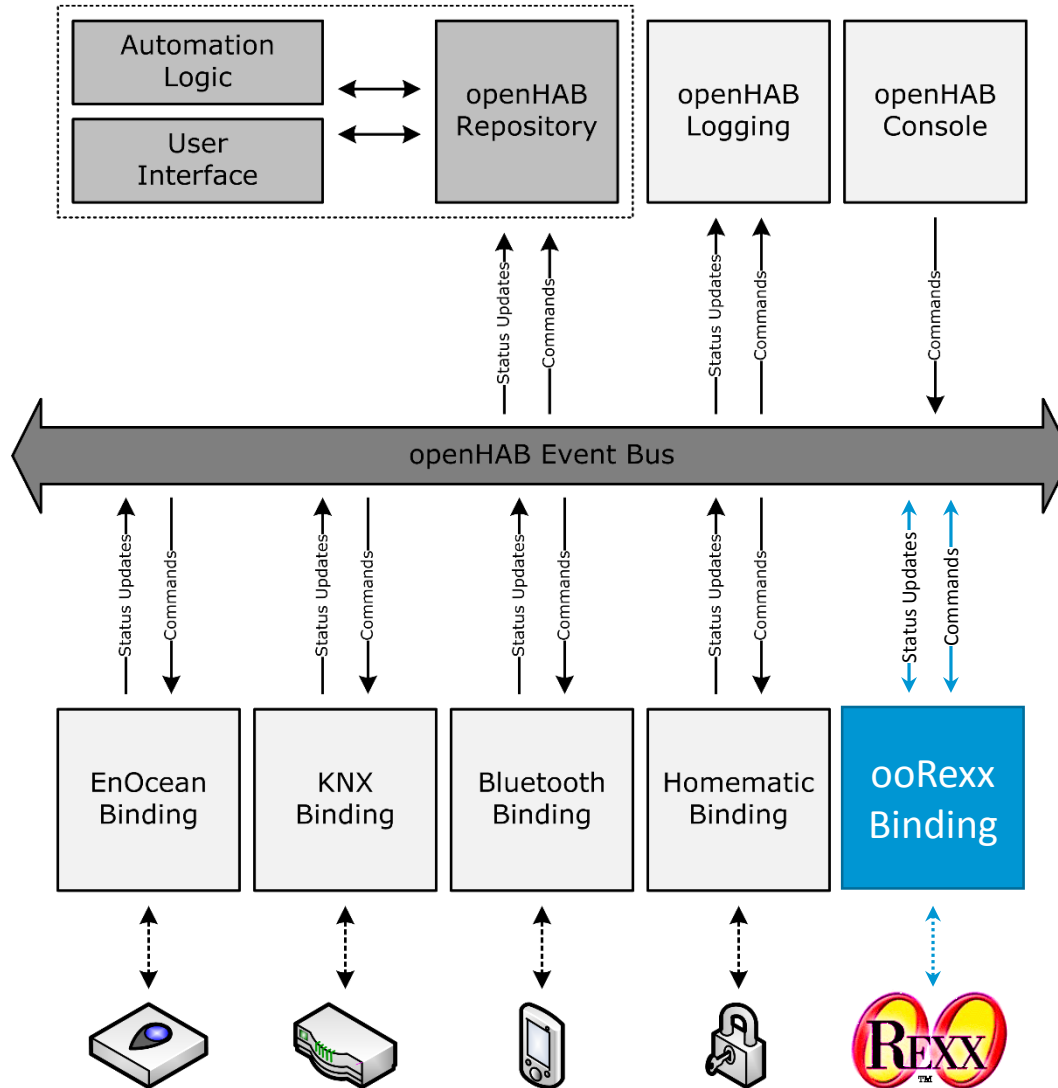
A solid blue circle is centered on a white background. Inside the circle, the text "#4" is positioned at the top, followed by "REXXHAB" in a larger font, and "Implementation" in a script font at the bottom.

#4

REXXHAB

Implementation

REXXHAB



REXXHAB – EVENTPUBLISHER

```
1 // Synchronous sending of a command.
2 // itemName - name of the item to send the command for
3 // command - the command to send
4 public abstract void sendCommand(String itemName, Command command)
5
6 // Asynchronous sending of a command.
7 // itemName - name of the item to send the command for
8 // command - the command to send
9 public abstract void postCommand(String itemName, Command command)
10
11 // Asynchronous sending of a status update.
12 // itemName - name of the item to send the command for
13 // newState - the new state to send
14 public abstract void postUpdate(String itemName, State newState)
```

class: org.openhab.core.events.EventPublisher

REXXHAB – OPENHAB.CLS

```
1 OnOffType = bsf.loadClass("org.openhab.core.library.types.OnOffType")
2 OpenClosedType = bsf.loadClass("org.openhab.core.library.types.OpenClosedType")
3 UpDownType = bsf.loadClass("org.openhab.core.library.types.UpDownType")
4
5 openHAB.command~ON = OnOffType~ON
6 openHAB.command~OFF = OnOffType~OFF
7 openHAB.command~OPEN = OnOffType~OPEN
8 openHAB.command~CLOSED = OnOffType~CLOSED
9 openHAB.command~UP = OnOffType~UP
10 openHAB.command~DOWN = OnOffType~DOWN
11
12 openHAB.state~ON = OnOffType~ON
13 openHAB.state~OFF = OnOffType~ON
14 openHAB.state~OPEN = OnOffType~ON
15 openHAB.state~CLOSED = OnOffType~ON
16 openHAB.state~UP = OnOffType~ON
17 openHAB.state~DOWN = OnOffType~ON
```

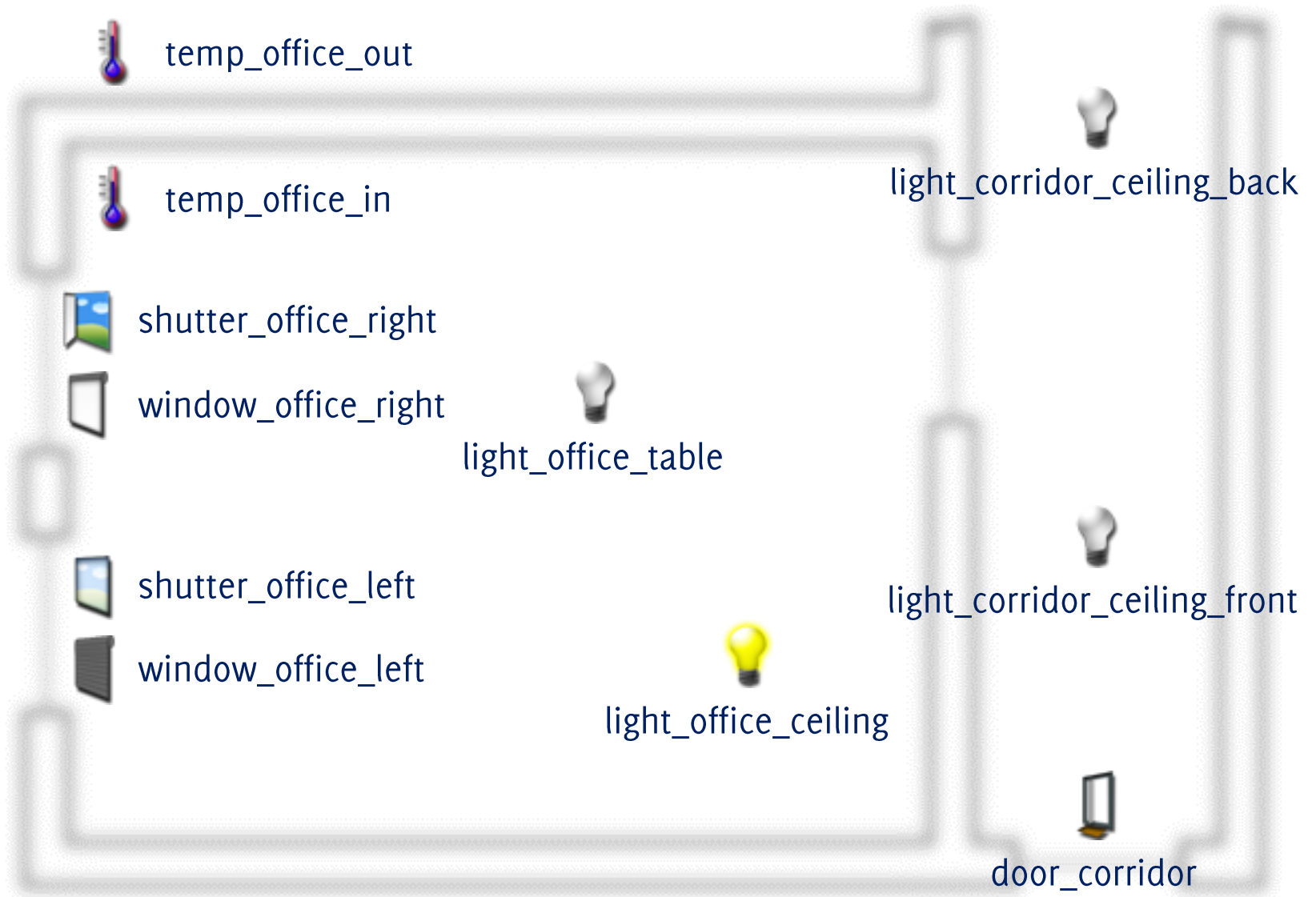


#5

REXXHAB

Demo

REXXHAB – DEMO HOUSE



DEMO HOUSE - CORRIDOR

```
1 Group g_corridor "Corridor" <corridor>
2
3 Switch light_corridor_ceiling_front "Ceiling Front" (g_corridor)
↳      { oorexx="command:commandReceived,update:updateReceived" }
4 Switch light_corridor_ceiling_back "Ceiling Back" (g_corridor)
↳      { oorexx="command:commandReceived,update:updateReceived" }
5
6 Contact door_corridor "Door" (g_corridor)
↳      { oorexx="update:updateReceived" }
```

file: openHAB/configurations/items/DemoHouse.items

DEMO HOUSE - OFFICE

```
1 Group g_office "Office" <office>
2
3 Switch light_office_ceiling "Ceiling" (g_office)
↳ { oorexx="command:commandReceived,update:updateReceived" }
4 Switch light_office_table "Table" (g_office)
↳ { oorexx="command:commandReceived,update:updateReceived" }
5
6 Rollershutter shutter_office_left "Office Left" (g_office)
↳ { oorexx="command:commandReceived,update:updateReceived" }
7 Rollershutter shutter_office_right "Office Right" (g_office)
↳ { oorexx="command:commandReceived,update:updateReceived" }
8
9 Contact window_office_left "Office Left" (g_office)
↳ { oorexx="update:updateReceived" }
10 Contact window_office_right "Office Right" (g_office)
↳ { oorexx="update:updateReceived" }
```

file: openHAB/configurations/items/DemoHouse.items

DEMO HOUSE – REXXDEMO.REX

```
1 use arg eventPublisher
2 .local~openHAB = eventPublisher
3 return .OpenHABProxy~new
4 ::requires OpenHAB.CLS
5
6 ::class OpenHABProxy
7
8 ::method commandReceived
9     use arg itemName, command
10    say "REXX noticed that " itemName " received command " command
11
12 ::method updateReceived
13    use arg itemName, state
14    say "REXX noticed that " itemName " received update " state
```

file: openHAB/configurations/scripts/RexxDemo.rex

DEMO HOUSE – COMING HOME

```
1 Switch bluetooth_device_in_range
↳ { bluetooth="45E43B6CA214", oorexx="update:bluetoothDevice" }
```

file: openHAB/configurations/items/DemoHouse.items

```
8 ::method bluetoothDevice
2 use arg itemName, state
3
4 if state~equals(.openHAB.state~ON) then
5 do
6   .openHAB~sendCommand("light_office_ceiling", .openHAB.command~ON)
7   .openHAB~sendCommand("light_office_table", .openHAB.command~ON)
8   .openHAB~sendCommand("light_corridor_ceiling_front", .openHAB.command~ON)
9   .openHAB~sendCommand("light_corridor_ceiling_back", .openHAB.command~ON)
10 end
```

file: openHAB/configurations/scripts/RexxDemo.rex

A solid blue circle is centered on a white background. Inside the circle, the text "#6" is positioned at the top, "SUMMARY AND" is in the middle, and "Outlook" is at the bottom.

#6

SUMMARY AND

Outlook

OPENHAB



- Smart Homes in general on the rise
 - 1000+ installations
 - large functionality, but mainly for enthusiasts
 - openHAB 2.0 to focus on user comfort
-

REXXHAB



- already wide range of possibilities
- numerous further improvements possible
- tests within physical environment needed
- portation to openHAB 2.0 necessary



THE END

Questions?

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Thank you!

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