



# IQRF in Smart Building Application

- Ardomus Approach



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## Smart Home and Smart Building

*The key element of a building*

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## Q & A



A decorative graphic consisting of a large light blue circle on the left and five smaller circles of various colors (green, purple, red, orange, and teal) arranged around it. The large circle contains the number '1' and the text 'Smart Home and Smart Building'.

1

Smart Home and  
Smart Building



# Home and Rooms







# Rooms and Hotel





# Rooms and Office

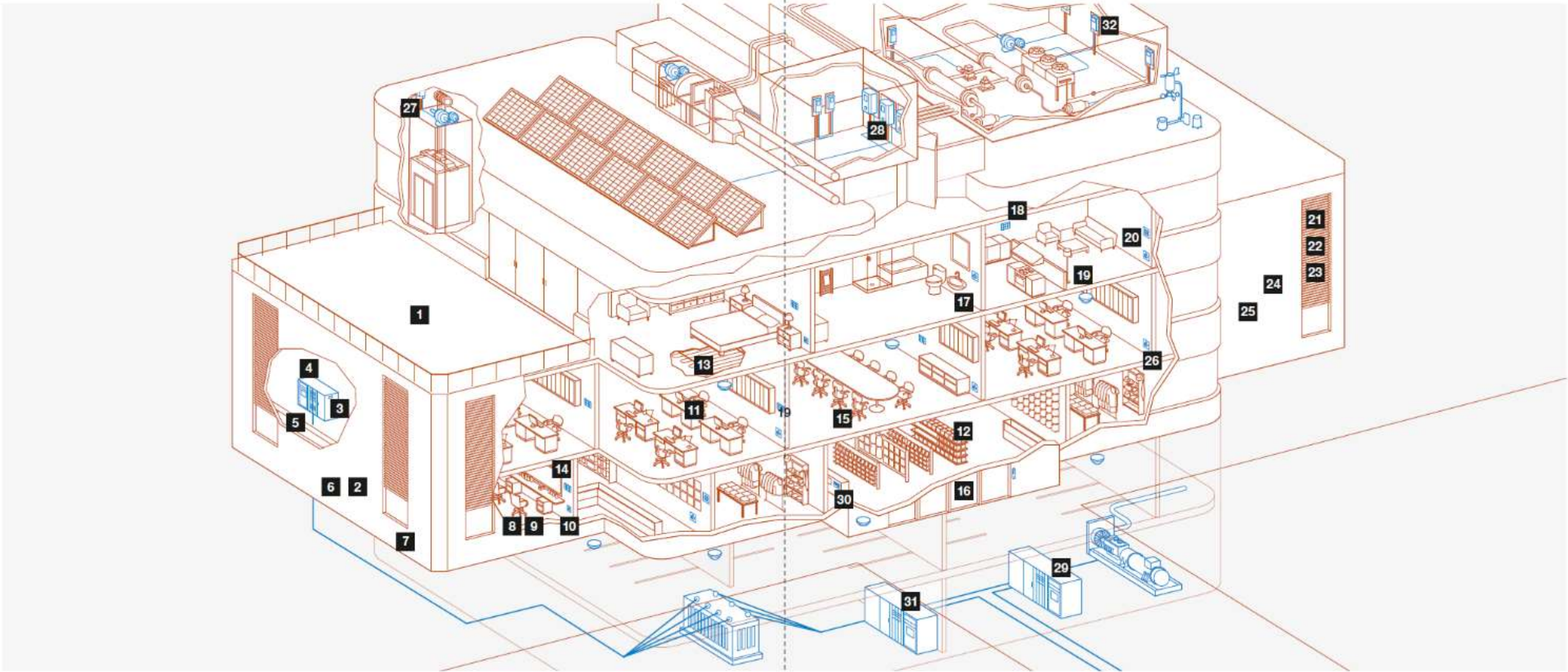




Solutions for electrical installation in buildings  
Quality of life, living comfort and safety

Solutions for electrical installation in buildings  
Solutions for commercial and industrial buildings

Home, Rooms, Hotel, Office,  
and Building



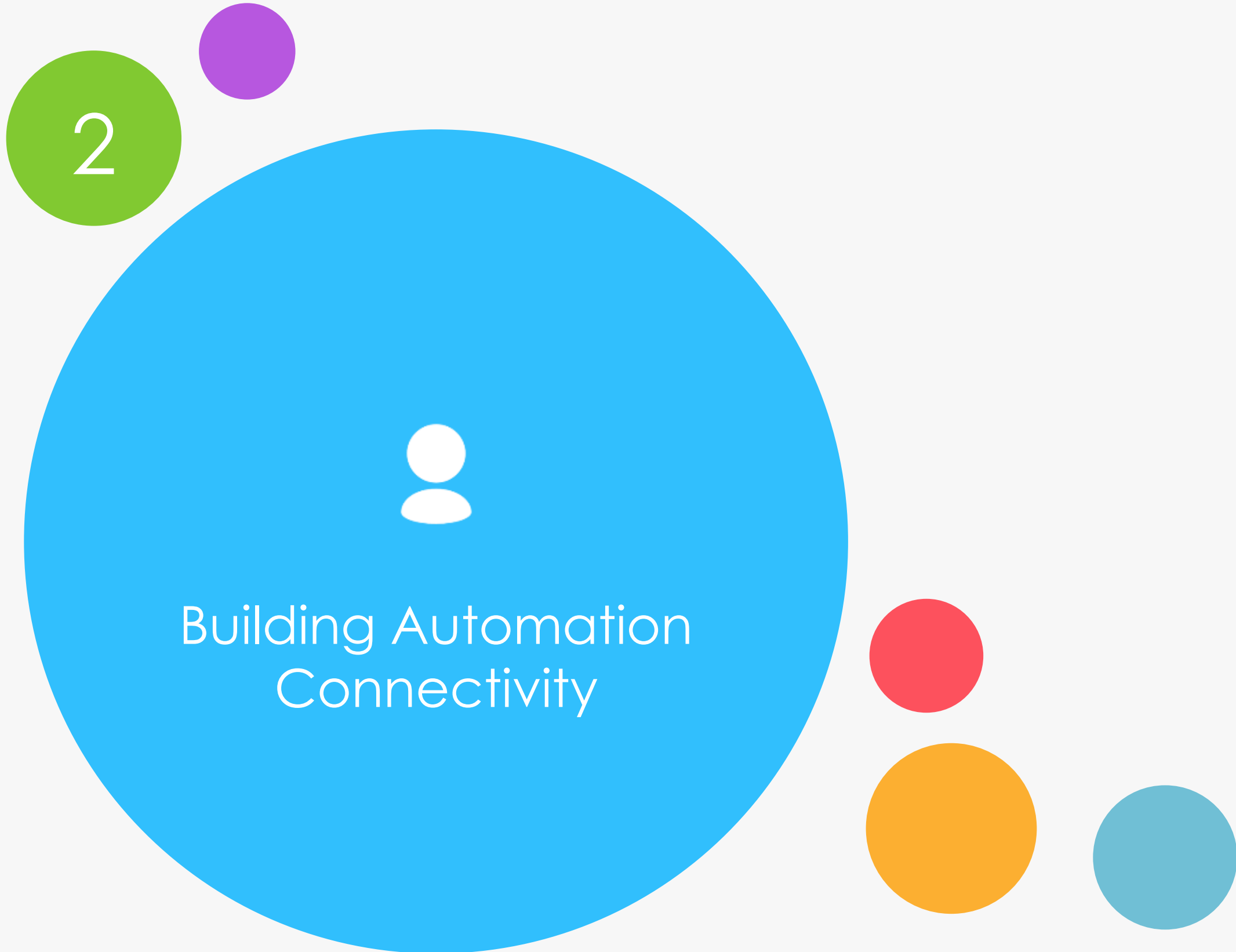
- 1. Safety switch
- 2. Energy meter
- 3. Small and home distributor
- 4. Smoke detectors
- 5. Movement detectors

- 6. Ph
- 7. CC
- 8. Sv
- 9. Ro
- 10. Bu
- 1. Lightning protection
- 2. Circuit breakers
- 3. Central battery systems
- 4. Cable ties and accessories
- 5. Cable connections
- 6. Distributors
- 7. Energy meter
- 8. Industrial connectors

- 9. Terminal blocks
- 10. Push-button
- 11. Non-metallic, flexible cable ducts
- 12. Cable duct, cable ties
- 13. Protection relay
- 14. AC & DC switches in housing
- 15. Bus modules
- 16. Overvoltage protection devices

- 17. Earth-fault relay
- 18. Door communication
- 19. Emergency lighting
- 20. Timers
- 21. Electrical and grounding connections
- 22. Safety components
- 23. Electrical distribution systems
- 24. Motor starter combinations, soft starters

- 25. Energy distribution unit
- 26. Cable connections & accessories
- 27. EMC safety switch
- 28. DC load-break switches
- 29. Tmax XT power circuit breaker
- 30. OT load-break switches
- 31. XLP safety load-break switch
- 32. Safety switches for aeration or air-conditioning systems



Building Automation  
Connectivity

2



# IoT Standards and Alliances Landscape

(Vertical and Horizontal Domains)

## Home/Building



## Manufacturing/ Industry Automation



## Vehicular/ Transportation



## Healthcare



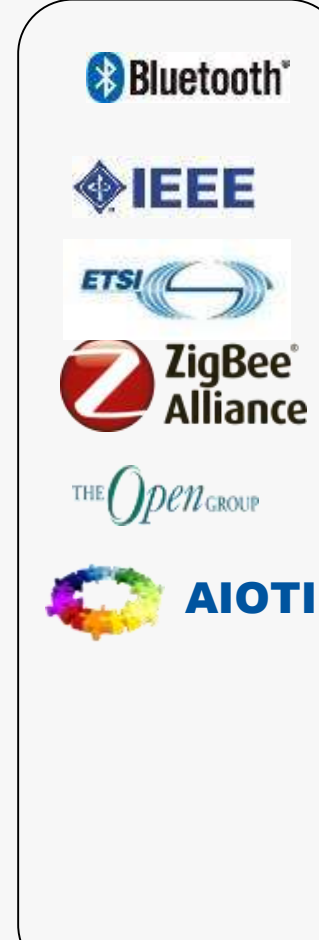
## Energy



## Cities



## Wearables



## Farming/ Agrifood

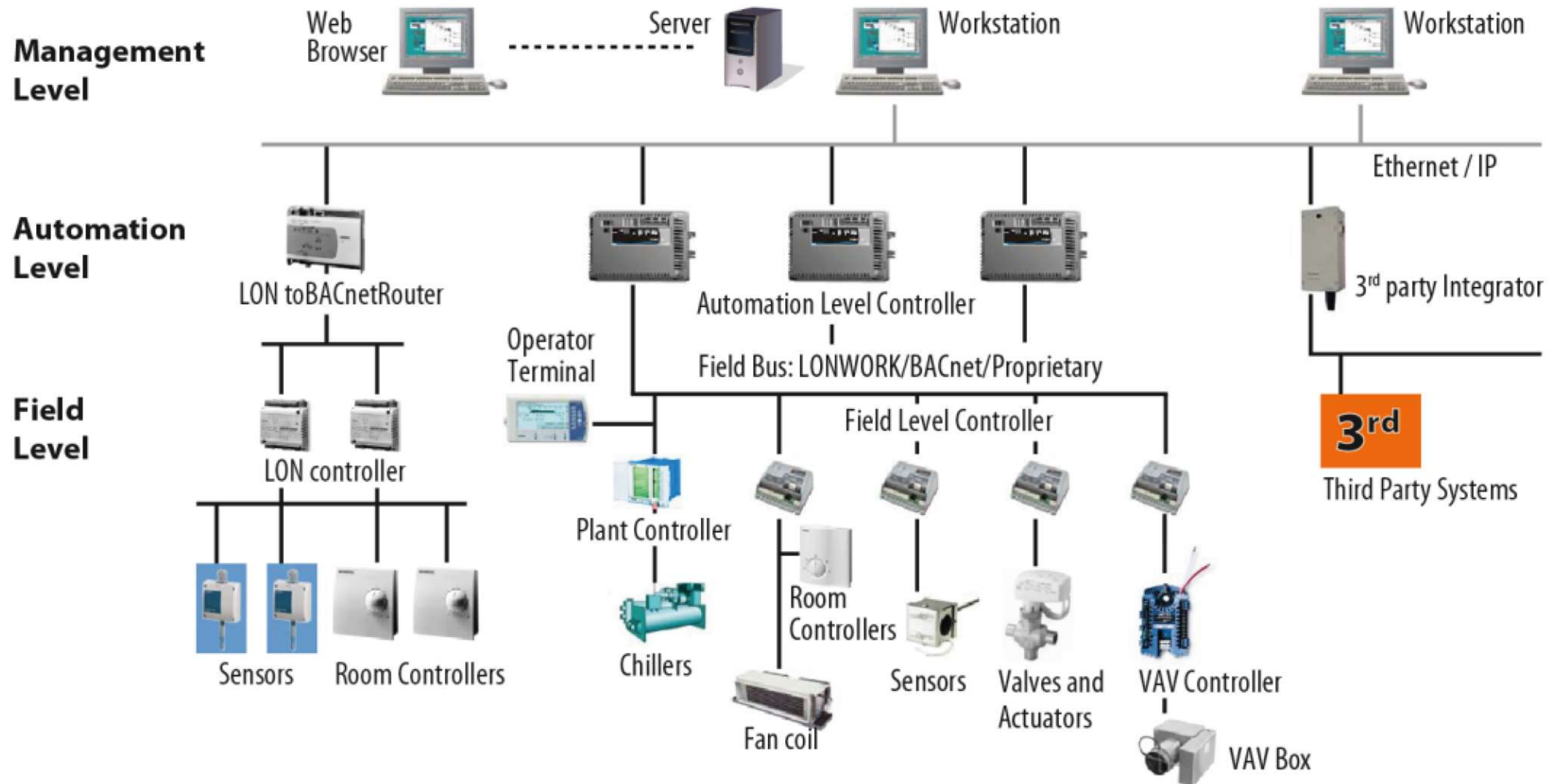


## Horizontal/Telecommunication





# Architecture Model for Building Automation



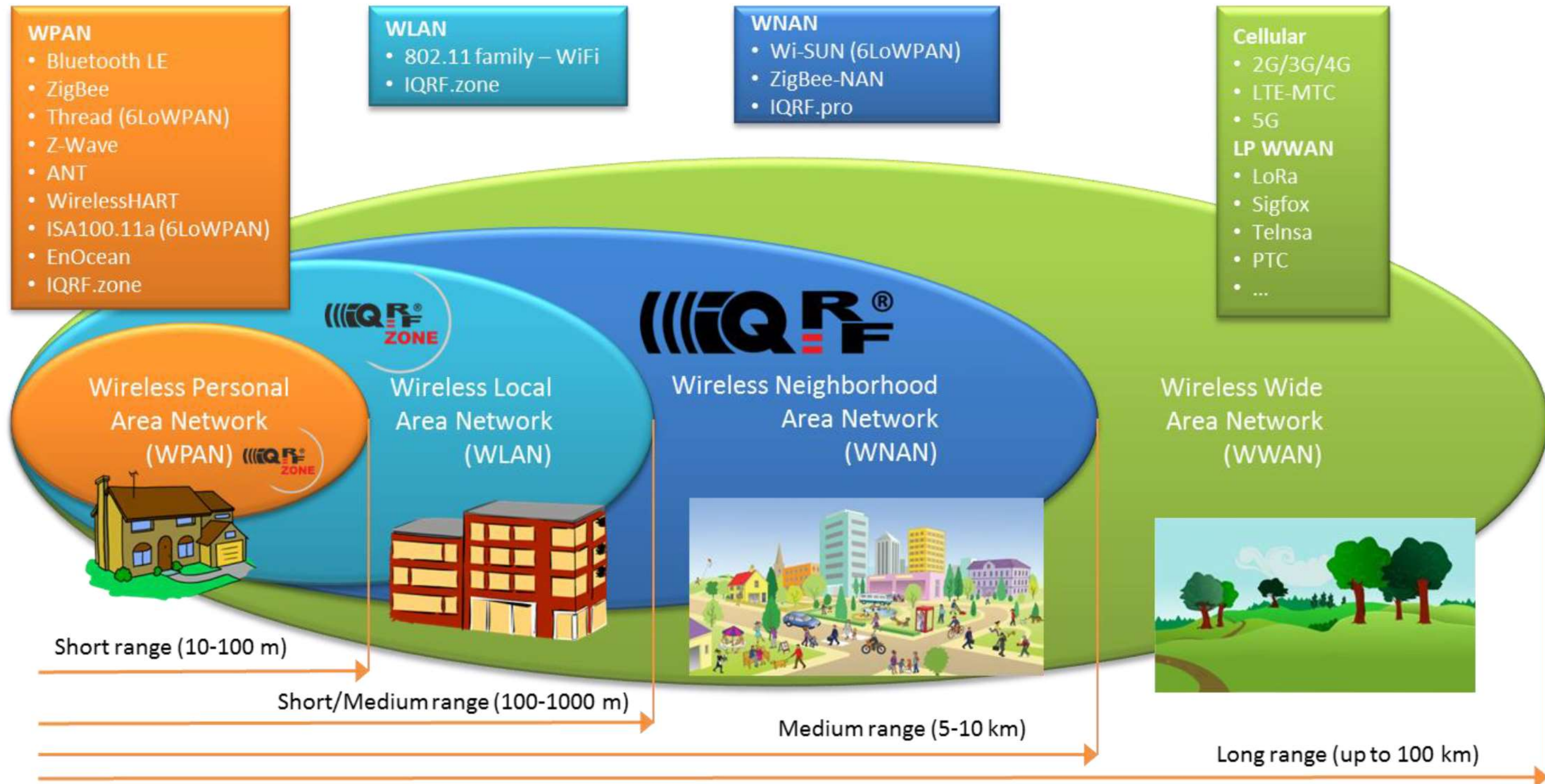


# Building Automation Connectivity





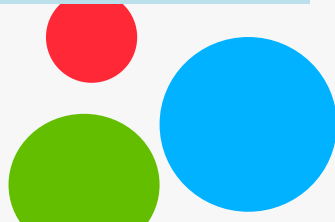
# Wireless Connectivity Technologies



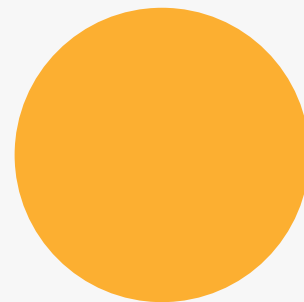


# Home Wireless Connectivity Technologies

	Zigbee	Dotdot	KNX		Wi-SUN	IQRF	Z-Wave
Application Layer	Zigbee Cluster Library		KNX	OCF	Not Available	IQRF Command	Z-Wave Command
Transport Layer	Zigbee Pro	Thread			UDP/TCP	DPA	Z-Wave Proprietary
Network Layer		UDP/DTLS			IPv6/ICMPv6/6LoWPAN		
Link Layer		IPv6/6LoWPan			802.15.4e/L2 mesh		
Physical Layer		802.15.4			802.15.4g	IQRF Proprietary	ITU-T G.9959









# The Unizyx Group

*Customer-oriented value extended into product, application design as well as service*



## Ardomus Networks gets spin-off

Ardomus Networks runs its start-up by spin-off from Zyxel Communications and founded in 2016

## Focus on IoT Connectivity Solution

Ardomus Networks aims to meet IoT marketplace need by developing universal connectivity solution



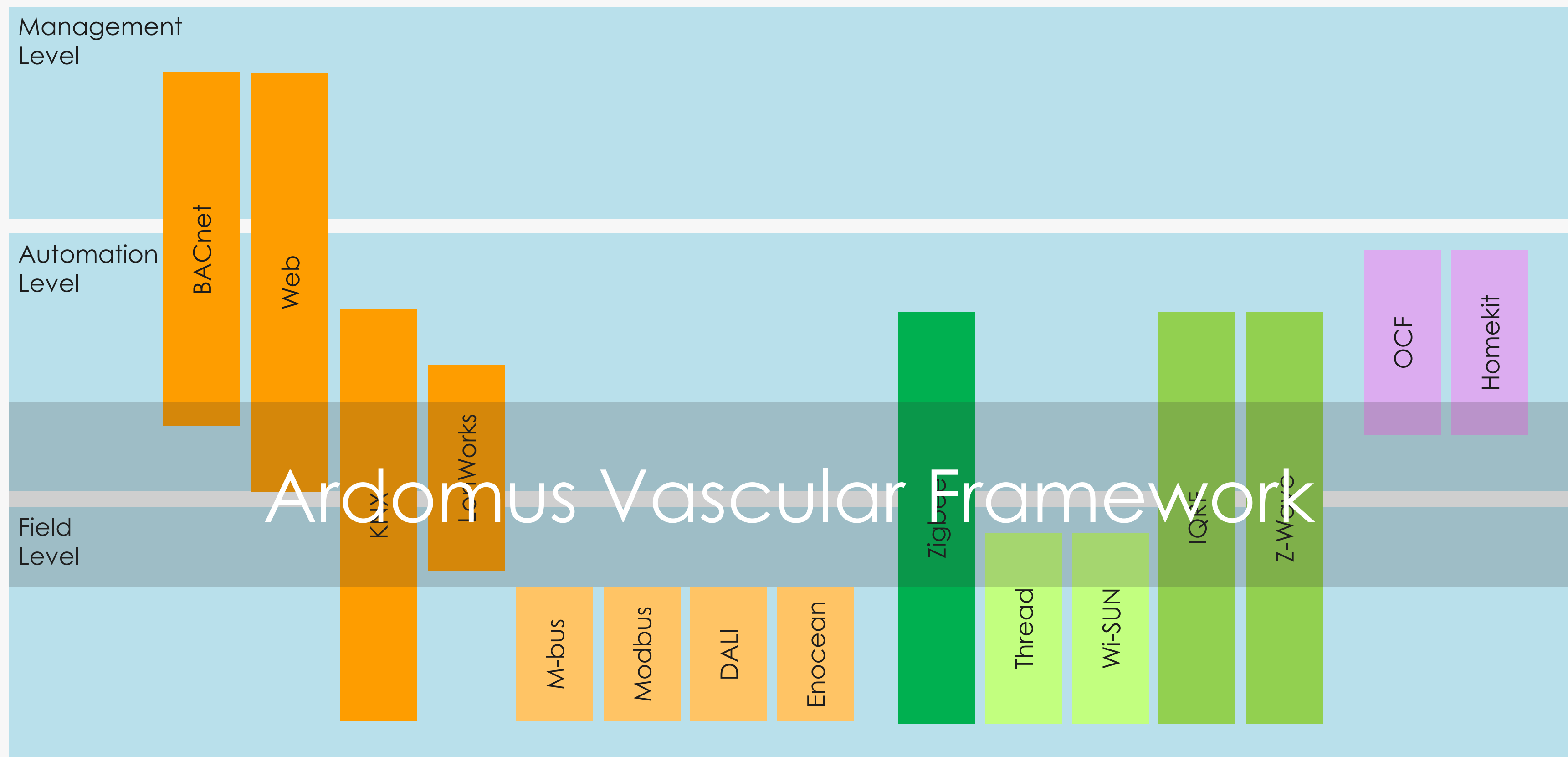


# Ardomus Networks

- Spin-off from Zyxel
- Provide IoT Connectivity Solution
- Target on Building Automation



# Ardomus Vascular Framework for Building Automation





- ✓ Device Management
- ✓ Firmware Upgrade OTA
- ✓ Data Collection, Storage
- ✓ Real-time Visualization
- ✓ Data Analytics
- ✓ 3rd Party API Engine



Cloud Management



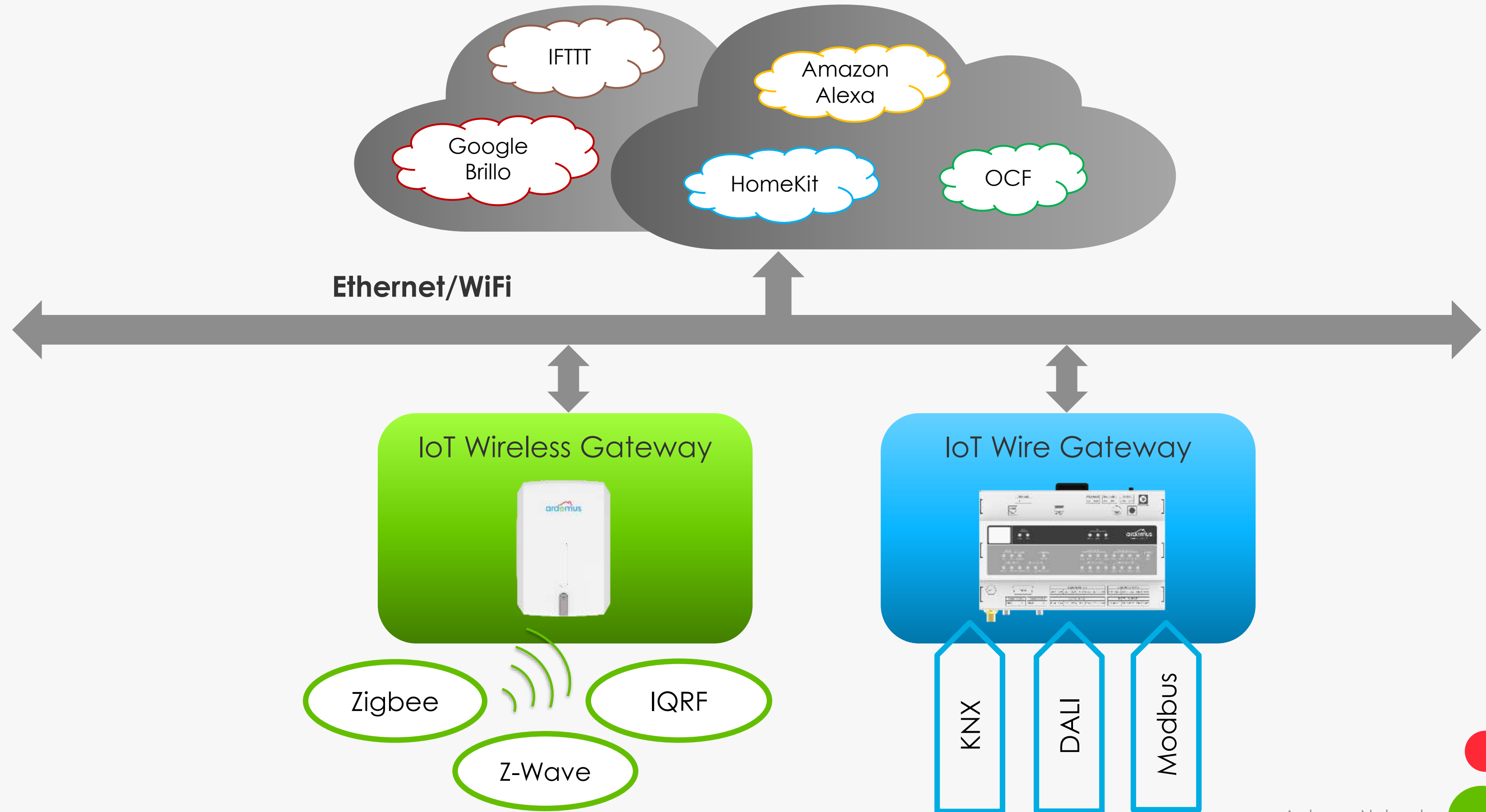
IoT Gateway and Local Control



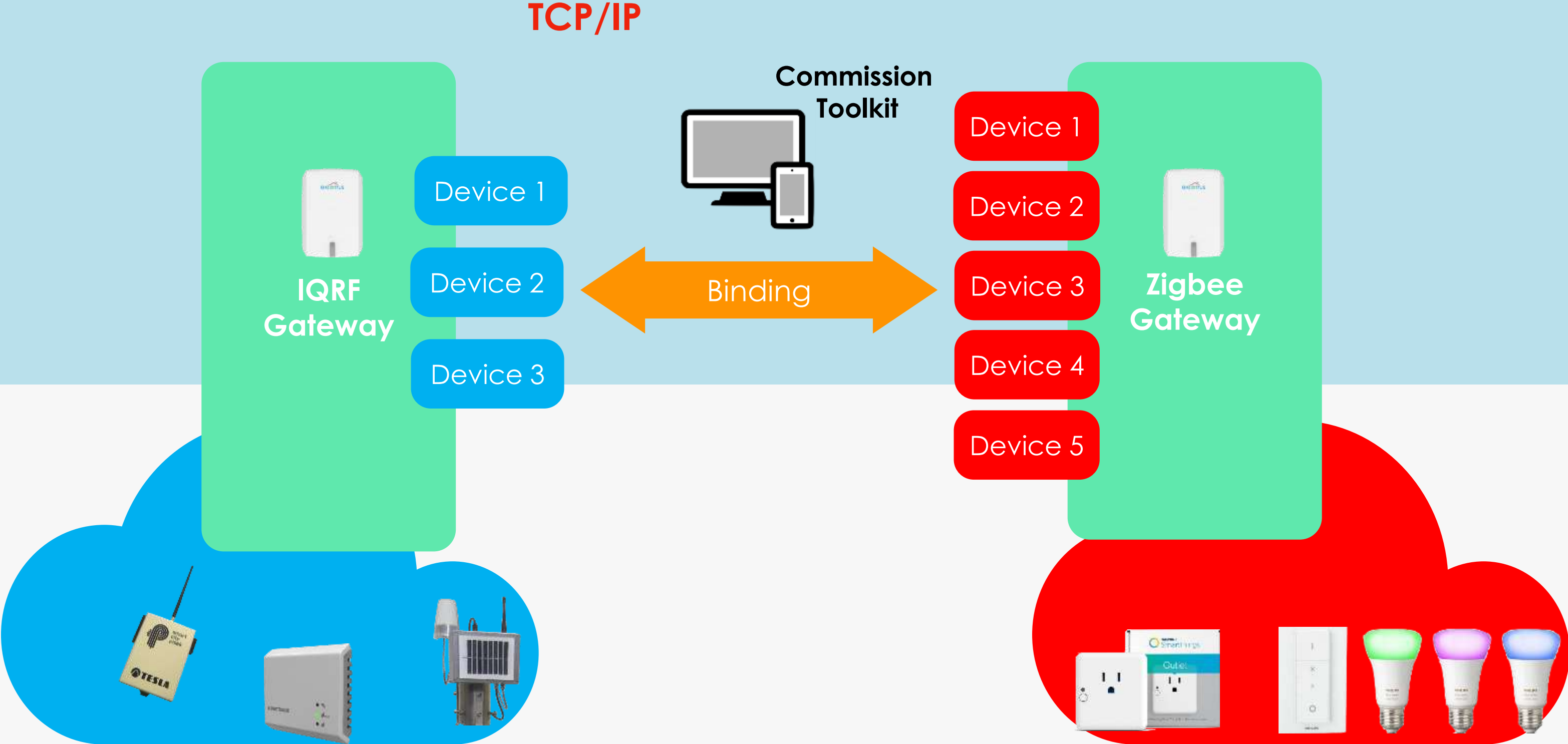
Variety of Devices From Many Brands



# Ardomus IoT Connectivity Solution



# Ardomus Demonstration Plan





# Ardomus IoT Wireless Gateway

## Connectivity Hardware :

- WLAN/Ethernet
- IQRF
- Zigbee
- Z-Wave

## Connectivity Protocol:

- TCP/IP
- Wireless IoT: Zigbee, Z-Wave, IQRF
- Wire IoT: KNX
- MQTT built-in

## User Experience

- APP for installation and control
- Commission GUI embedded



# Ardomus IoT Wire Gateway

## Connectivity Hardware :

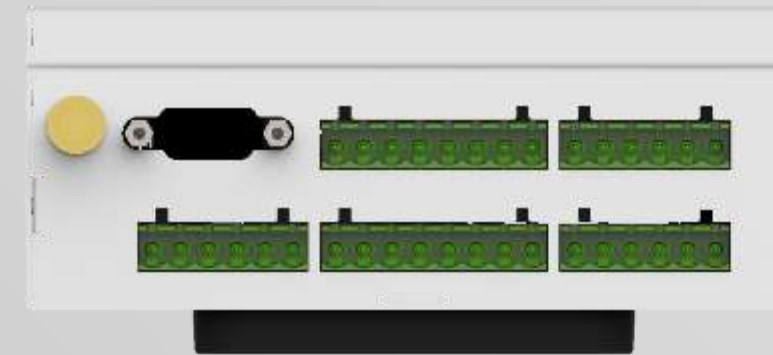
- 1xEthernet
- 1xKNX
- 2xRS485/Modbus
- 1xRS-232
- 2xDALI
- 8xDI/DO
- 1xUSB
- (optional) Zigbee or Z-Wave or IQRF

## Connectivity Protocol:

- TCP/IP
- Wireless IoT: Zigbee, Z-Wave, IQRF
- Wire IoT: KNX, Modbus, DALI
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**Venation D series**



# Ardomus IoT Cloud Management

Device Management



Software Upgrade OTA



Data Collection, Storage



Real-time Visualization



3<sup>rd</sup> Party API Engine



More than just an IoT Gateway

- ✓ Connect Smarts
- ✓ Manage Brilliants
- ✓ Service wise





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Join  
us

# Contact Us!



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