QuickSet® WIDGET

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Agenda

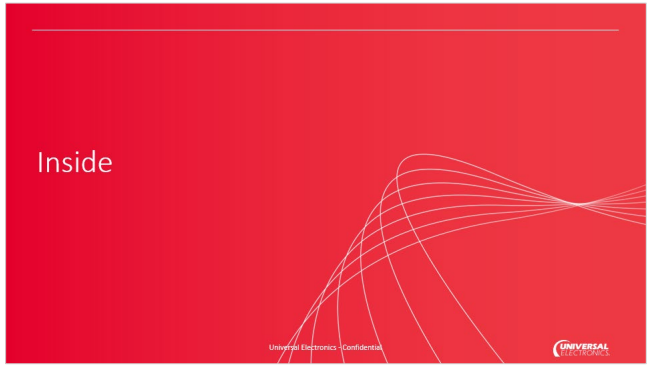
- Trends
- Widget features
- Widget architecture
- Widget target channels
- Product lifecycle management

Menu

User problem

OEM problem

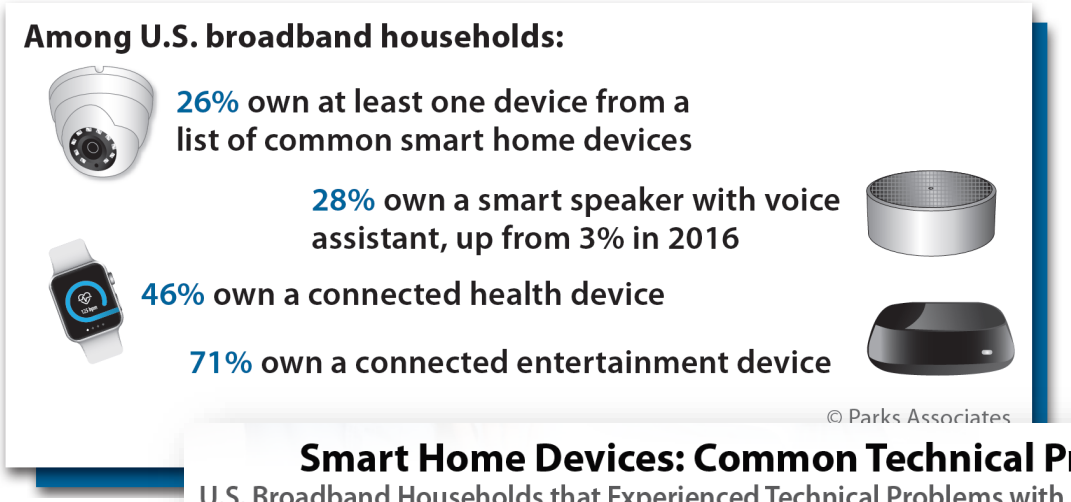
Features


Inside

Channels

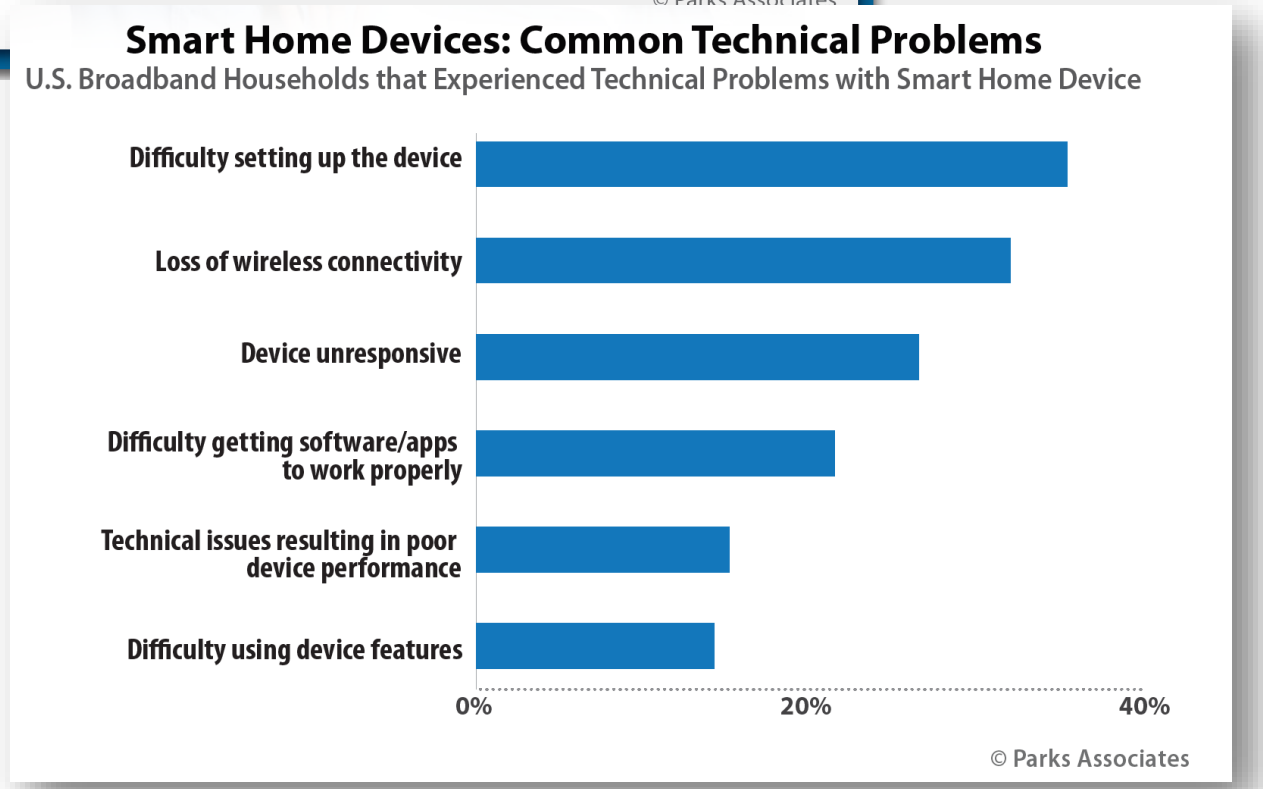
Lifecycle support

Connected home is expanding rapidly but consumers need help



TOP CONSUMER CONCERNS

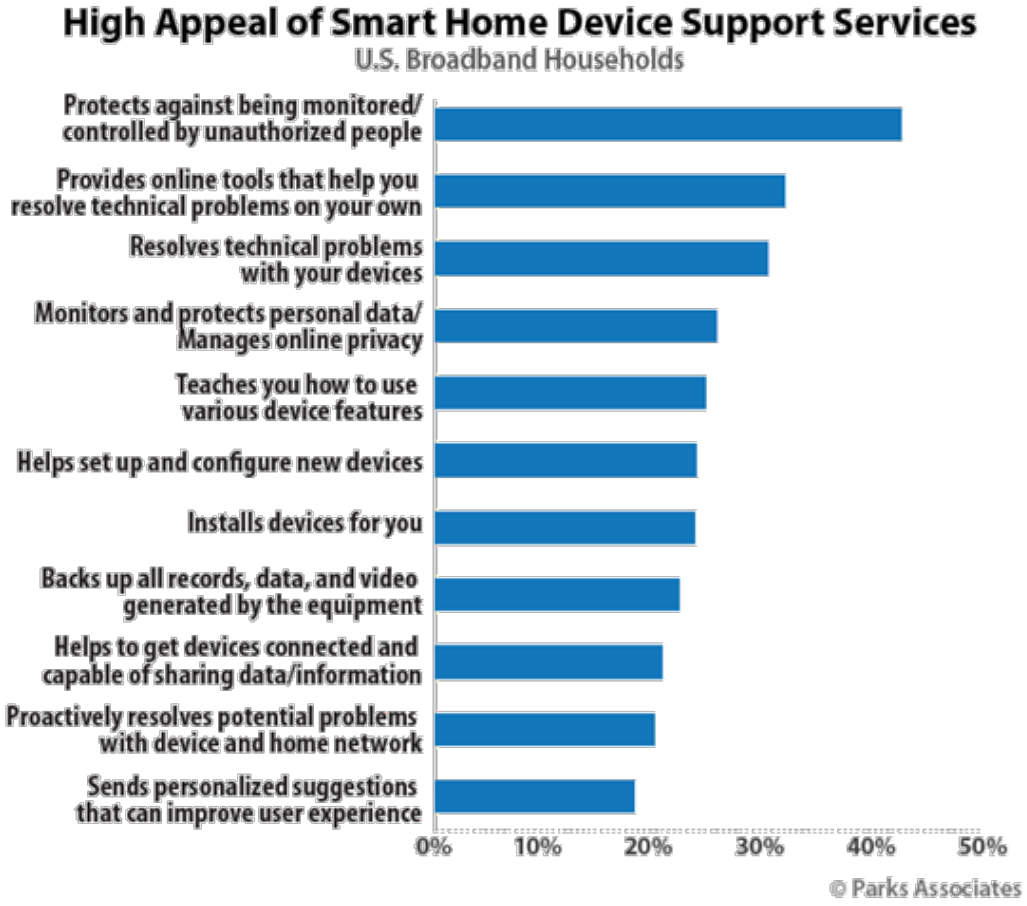
- Smart home device setup complexity
- Setting up connectivity correctly and securely
- Interoperability with existing and new smart home devices
- Do not know what features and functions are available



Connected home is expanding rapidly; OEM must address user expectations

CONNECTED PRODUCTS CREATE A LONGER TERM RELATIONSHIP BETWEEN OEM AND USERS

- Interactive user experience
- Readily available for help and guidance
- Easier to setup
- Easier to work with third-party devices
- Ability to monitor, maintain and fix device issues on an ongoing basis



User problem

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Setting up new smart home device

(or change setting of existing device)

- Consumer is facing a myriad of smart home devices that use many different connectivity and security technologies
- User should not deal with different configuration and pairing methods in various wireless technologies
- When a user cannot get through the smart home device setup easily, they will not use the devices to full potential, or they will not use the device at all

Digital transformation of end user interaction

- With QuickSet Widget's built-in QuickSet capabilities and Virtual Agent, end users can focus on core product value and features provided by OEM.

- As a result, OEM brand engagement experience with users is greatly enhanced.

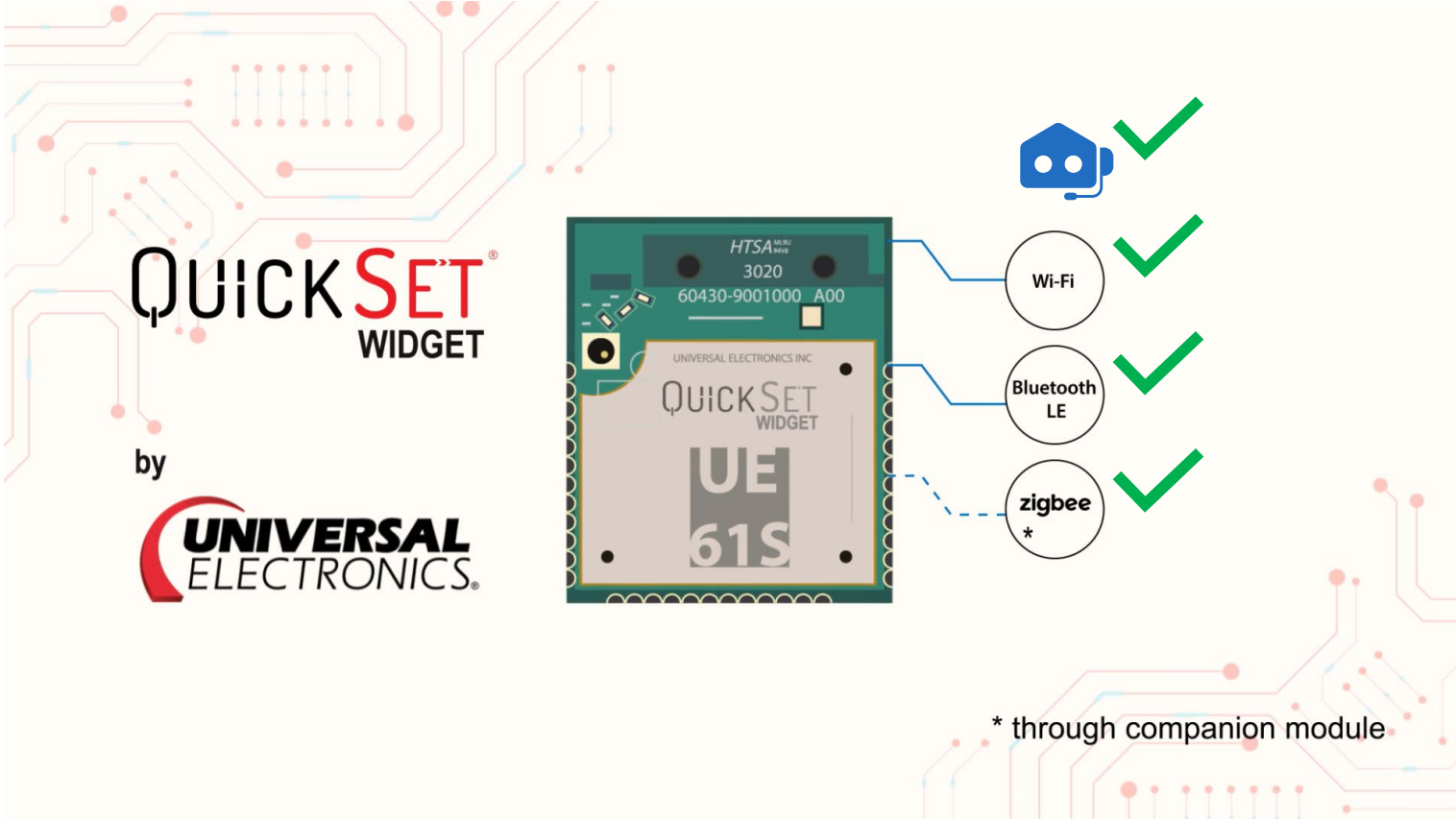
OEM problem

Easier to set up new smart home device with QuickSet Widget

(or change setting of existing device)

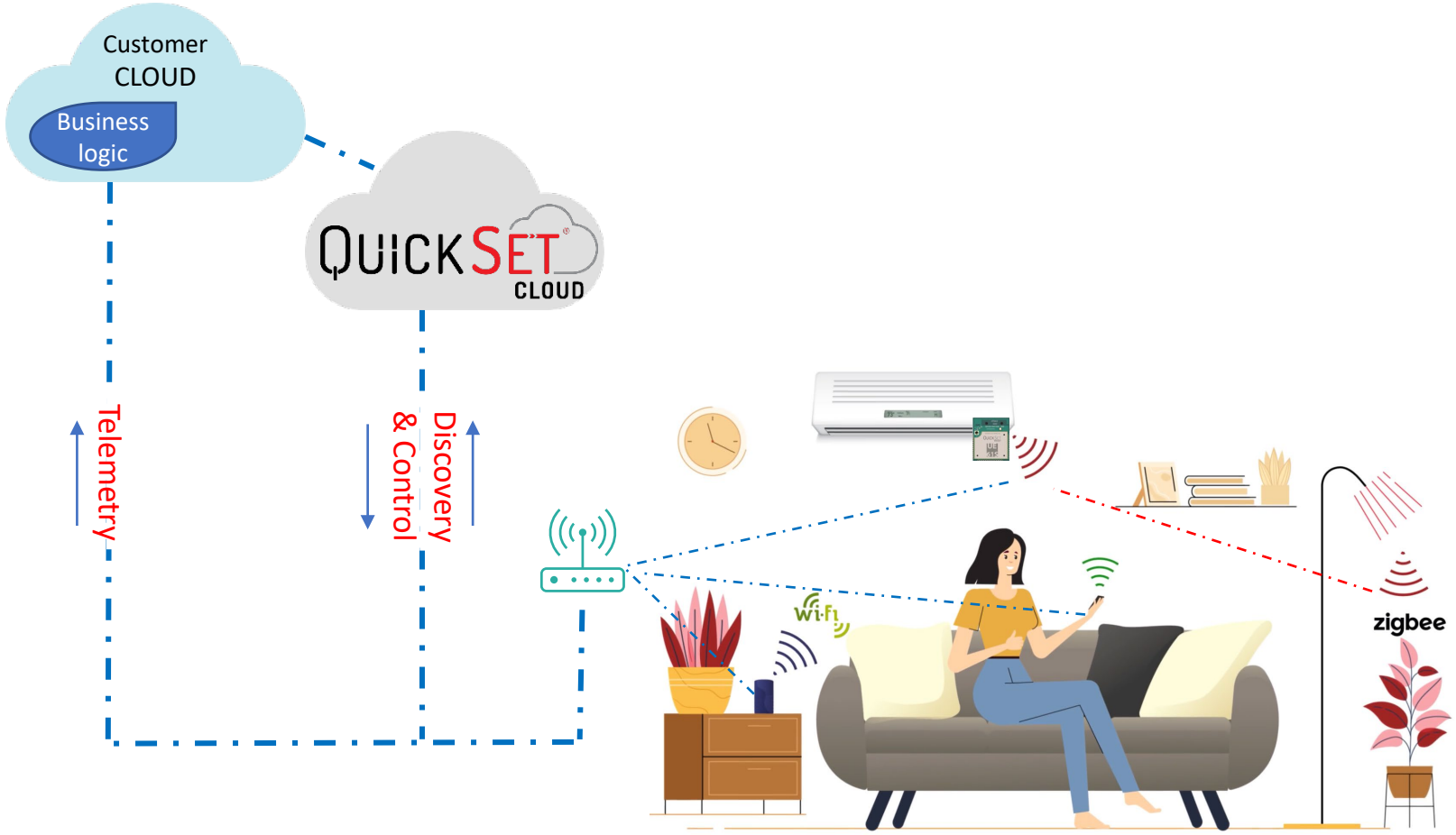
- Designed for digital transformation of end user interaction and brand engagement experience

- Integrating QuickSet Widget in OEM products helps OEM to focus resources on unique value and competencies while using built-in capabilities for connectivity, setup, interoperability, device maintenance and full lifecycle management



Device maintenance and full lifecycle management

- With fully connected and managed QuickSet Widget, the OEM customer support team can easily view the status of their product, troubleshoot remotely and make use of the built-in capabilities to get notifications if the product needs servicing



Features

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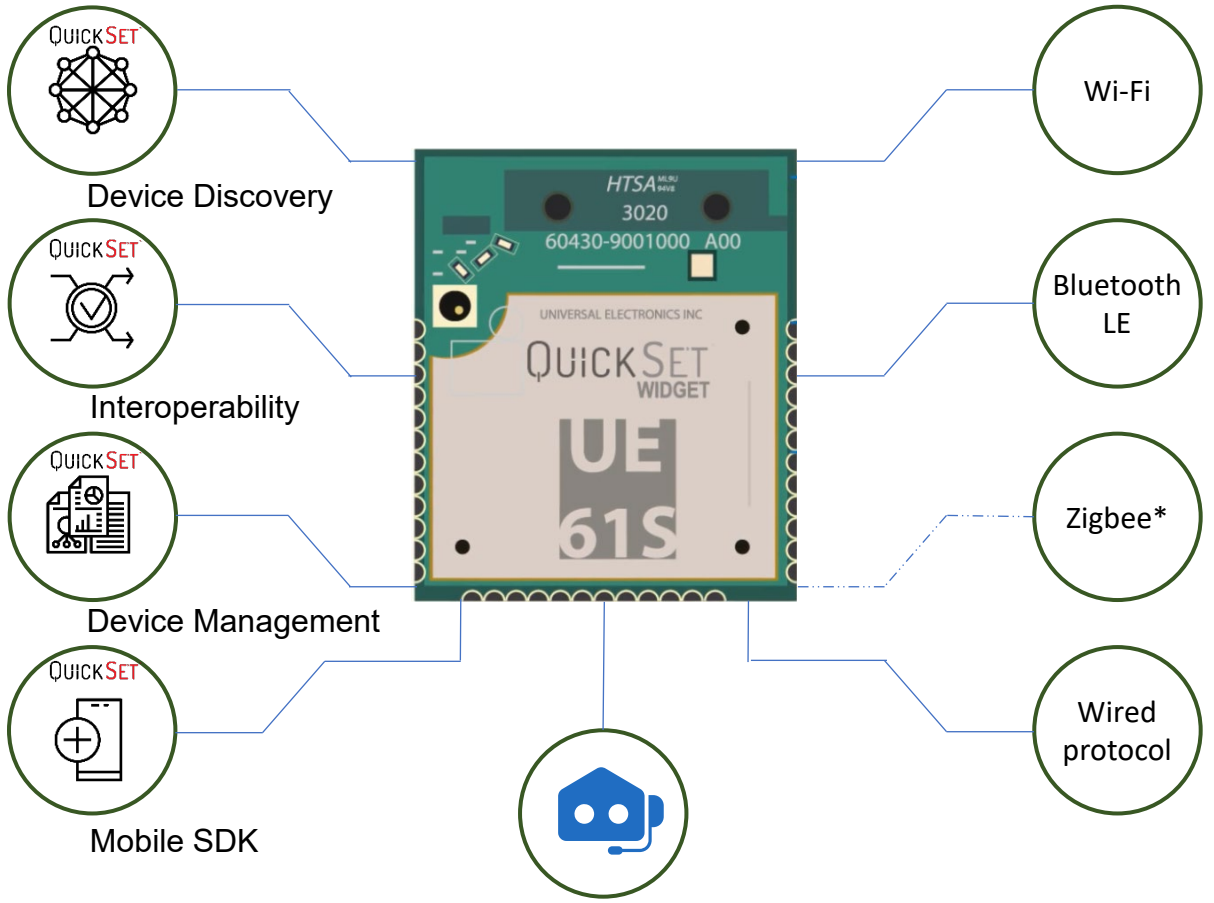
QuickSet Widget Features

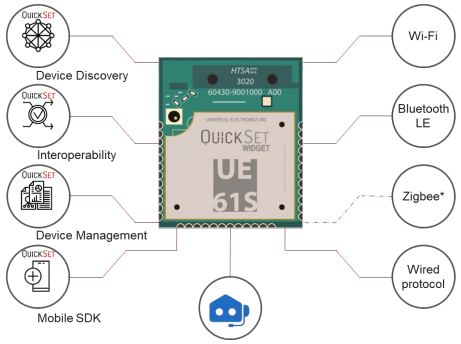
- QuickSet Widget is integrated with QuickSet Cloud device management services
- Offering a remote management dashboard and mobile software development kit to deliver turnkey capabilities for onboarding, interoperability, management and lifecycle support of connected home products
- QuickSet provides a scalable platform for simplifying onboarding and control across entertainment and smart home devices, already in use by many leading brands



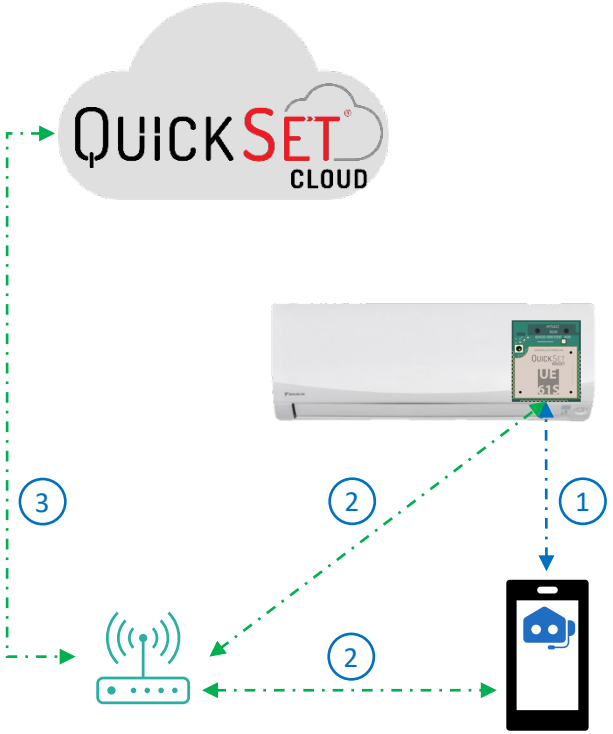
QuickSet Widget Features and Benefits

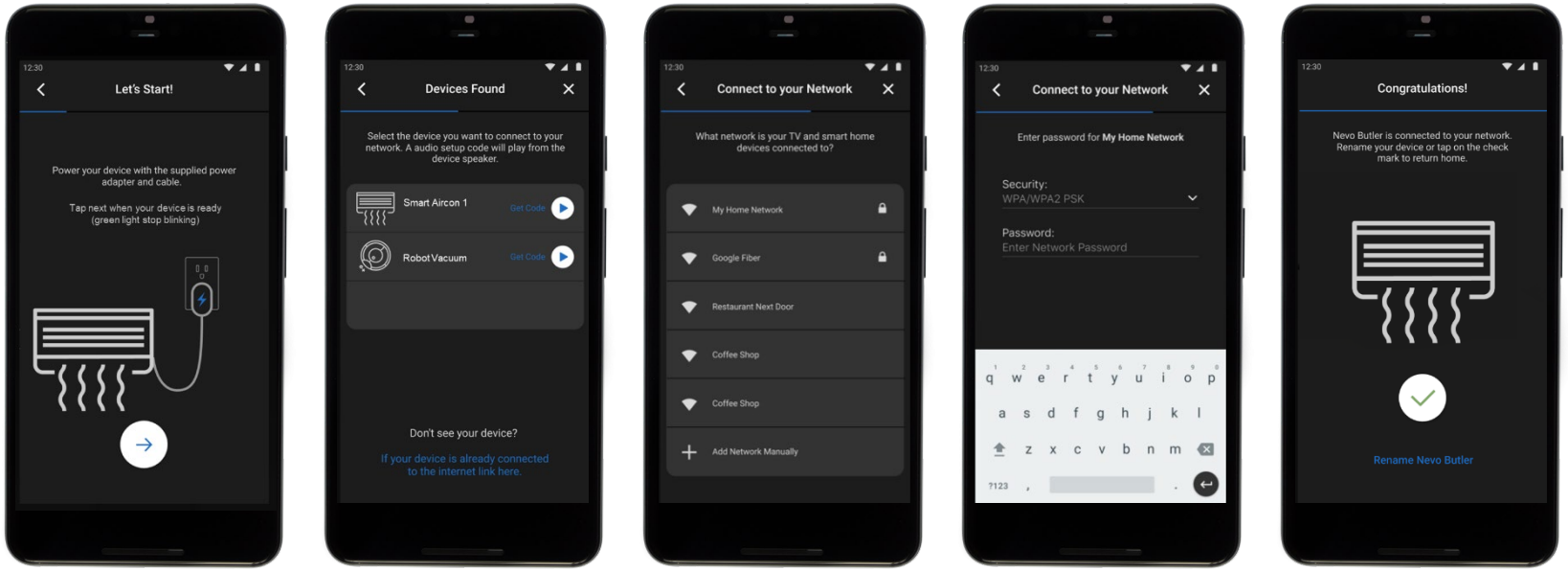
- **Easy onboarding** for connection to WiFi network and IP/Zigbee based companion devices through mobile app with minimal steps
- Fully secured and managed product lifecycle through device management dashboard and remote access provide ongoing secure feature updates and remote troubleshooting to **reduce ongoing product lifecycle maintenance costs**
- Virtual Agent offers **self-help device for setup, discovery and troubleshooting** available on device or via mobile app or support website
- **Enable interoperability** with third-party devices/ecosystems that reduce friction by controlling and being controlled by third-party devices/ecosystems
- **Integration with existing customer cloud** back-end for business logic and telemetry data, as well as QuickSet Cloud device maintenance, product lifecycle management
- **Hardware Development Kit** makes it easy for OEMs and system integrators to start integration and development even before target board is available
- **Extensive connectivity capability** that includes WiFi, Bluetooth LE, IR, wired protocol, and extendable to Zigbee through UE878 module or multi-protocol SoC UE878; multi-RF platform is optimized to ensure best possible performance

Easy fuzz-free onboarding

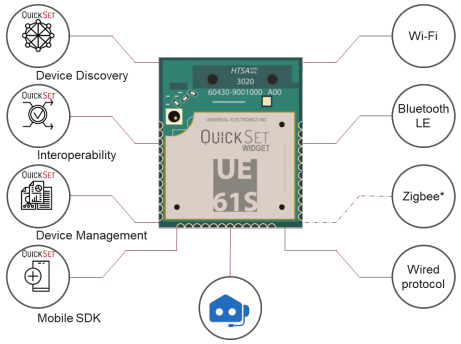


For connection to WiFi network and IP/Zigbee based companion devices through mobile app with minimal steps and as simple as connecting a mobile phone to a WiFi network

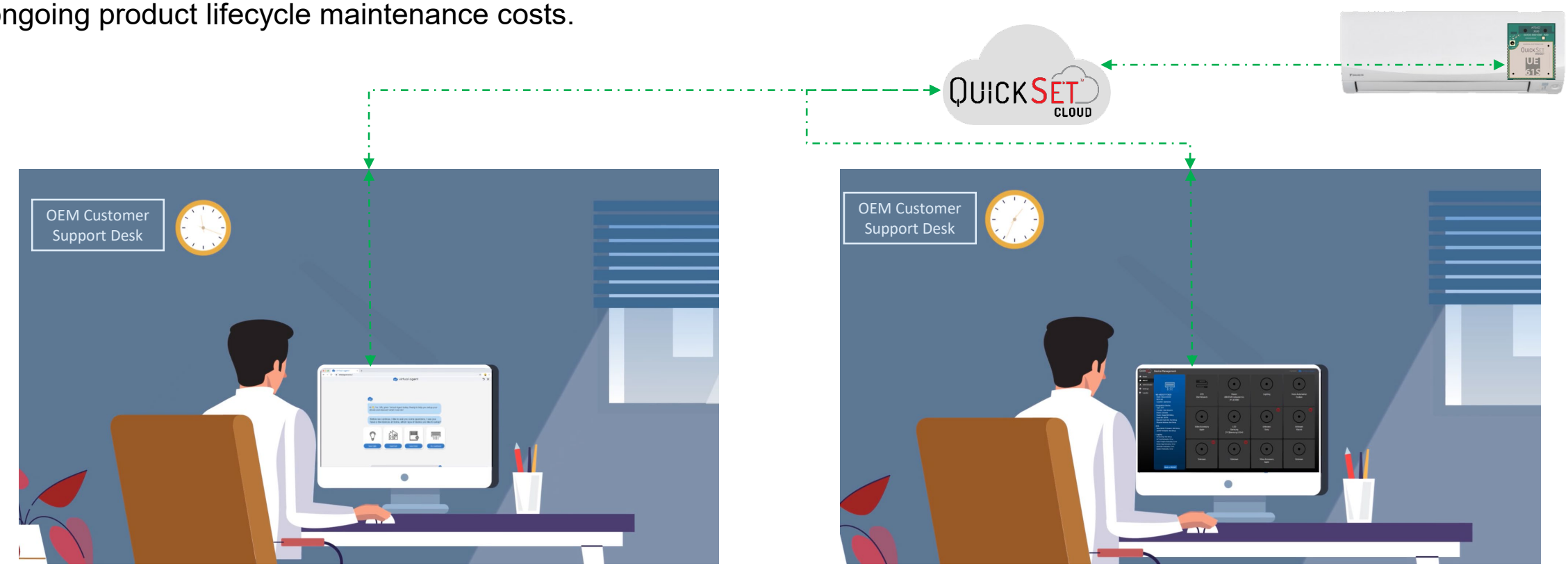




Secured and managed product lifecycle

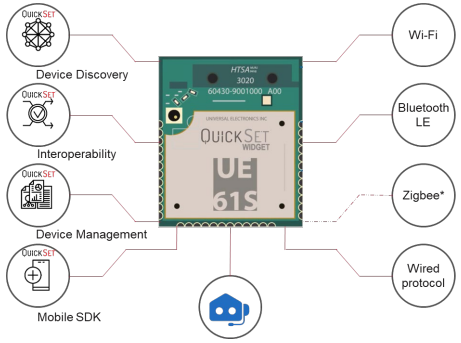


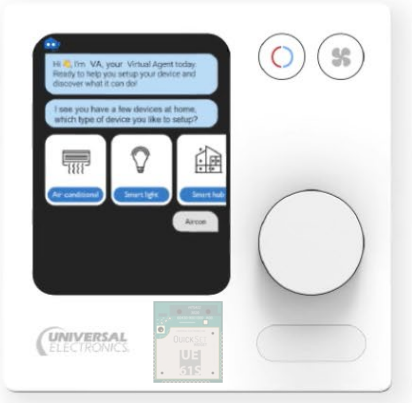
Device management dashboard and remote access provide ongoing secured end-to-end feature updates and remote issue troubleshooting throughout OEM product lifecycle, reducing ongoing product lifecycle maintenance costs.

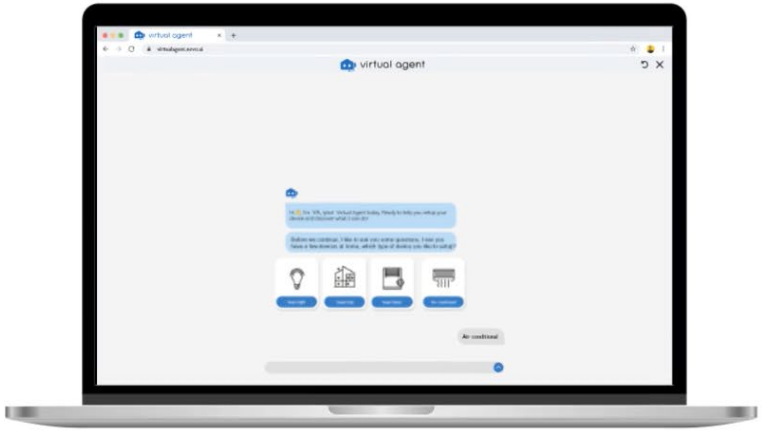


Virtual Agent for user self-help

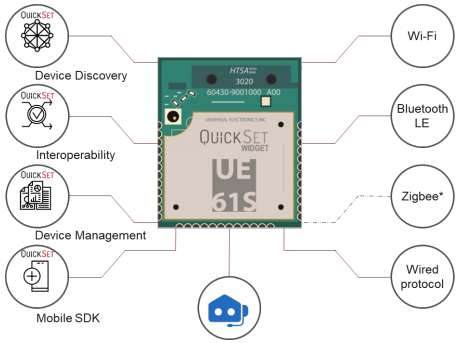
Virtual Agent offers enhanced user experience including IP device discovery and setup, product feature discovery and troubleshooting via integration on device or via mobile app or support website



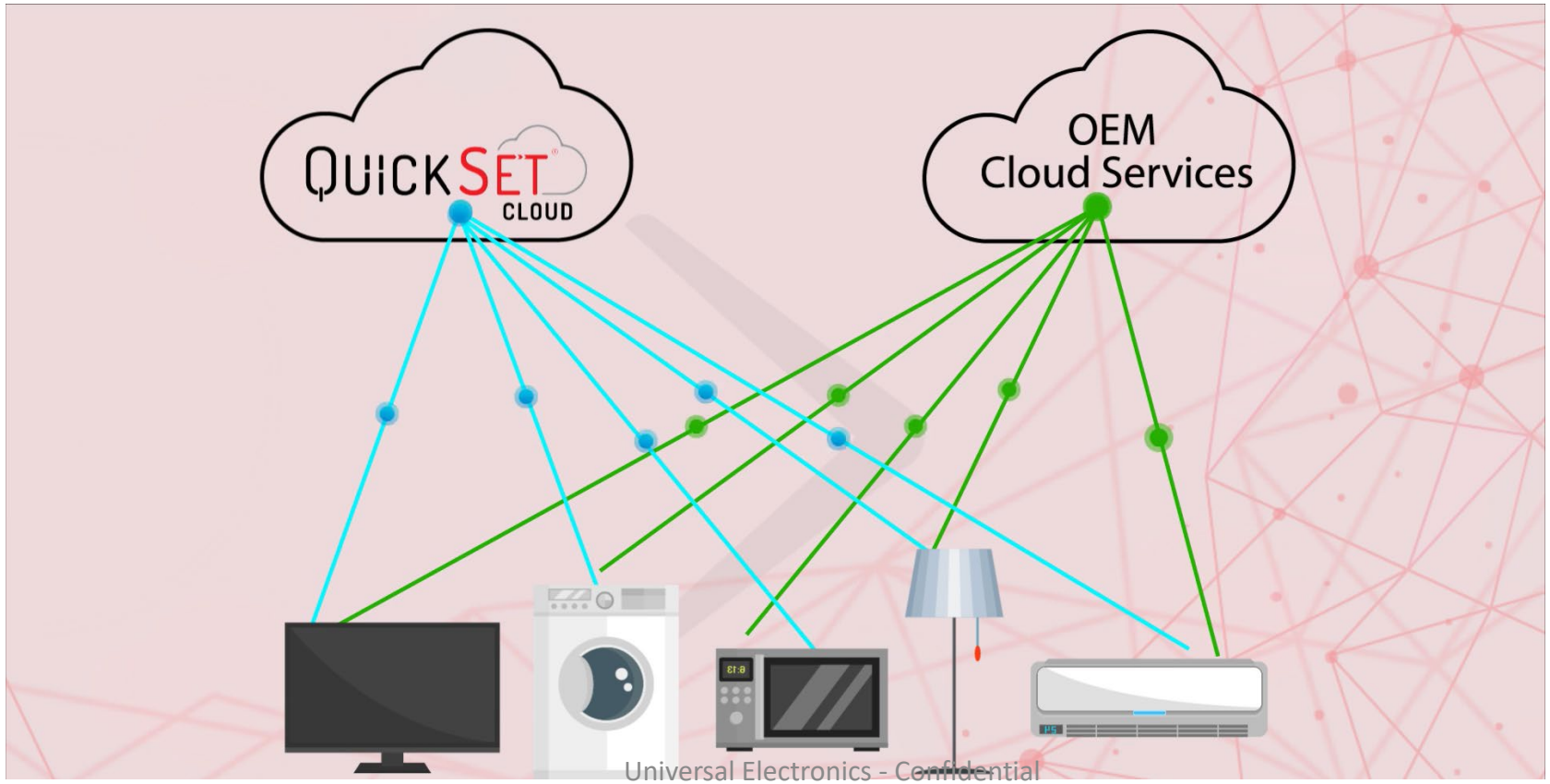




Multi-cloud



Multi-cloud allows integration with existing customer cloud back-end for business logic and telemetry data, while connecting to QuickSet Cloud for device maintenance, product lifecycle management and interoperability services



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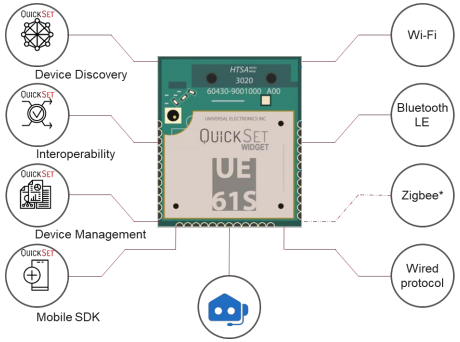
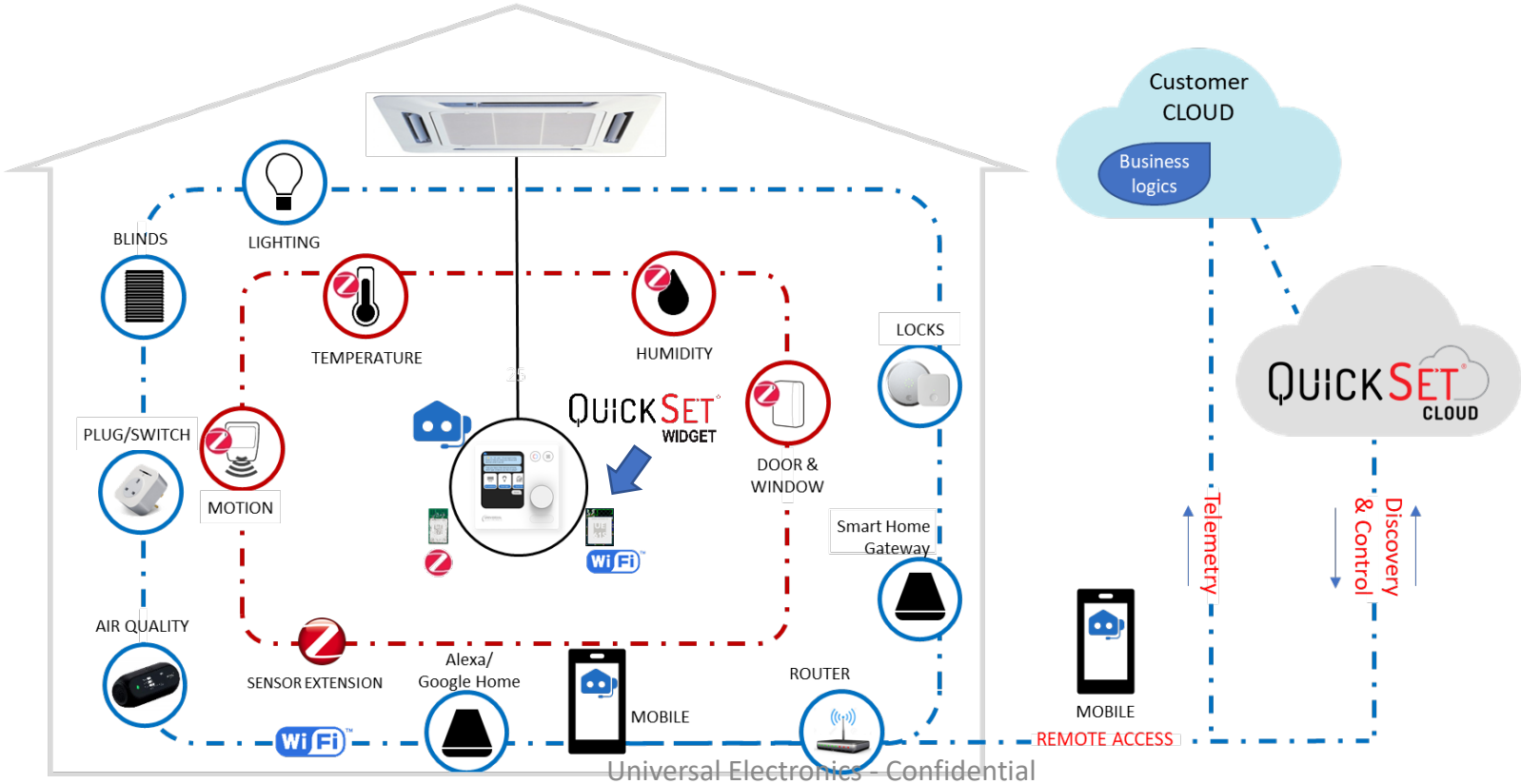
Interoperability as a service



Enable powerful interoperability with third-party devices and ecosystems in bare-metal, cost-effective modules that reduce friction by controlling and being controlled by third-party devices and ecosystems



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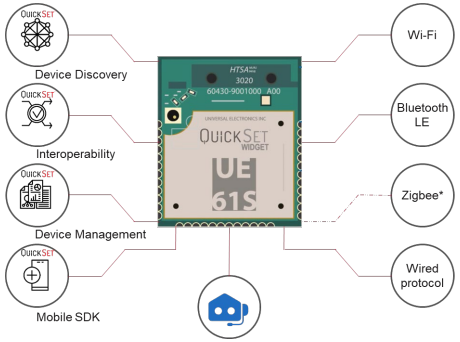
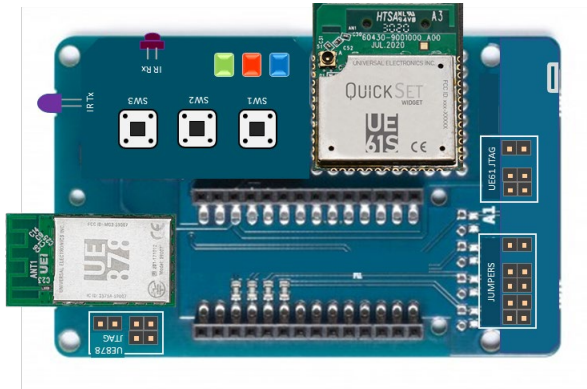
Hardware Development Kit (HDK)

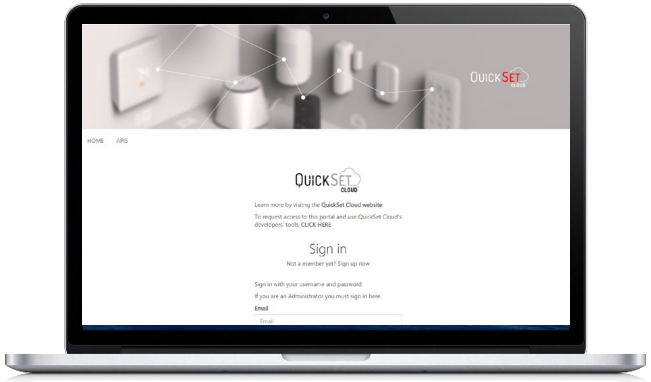


HDK allows for easy evaluation and quick prototyping, making it simpler for OEMs, builders and system integrators to start integration and development even before target board is available



Host adapter board for QuickSet Widget module and companion Zigbee module

Standard FTDI USB to UART cable (purchase by developer)

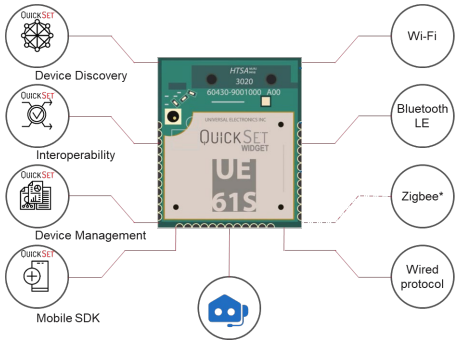


Developer registration at QuickSet Cloud portal

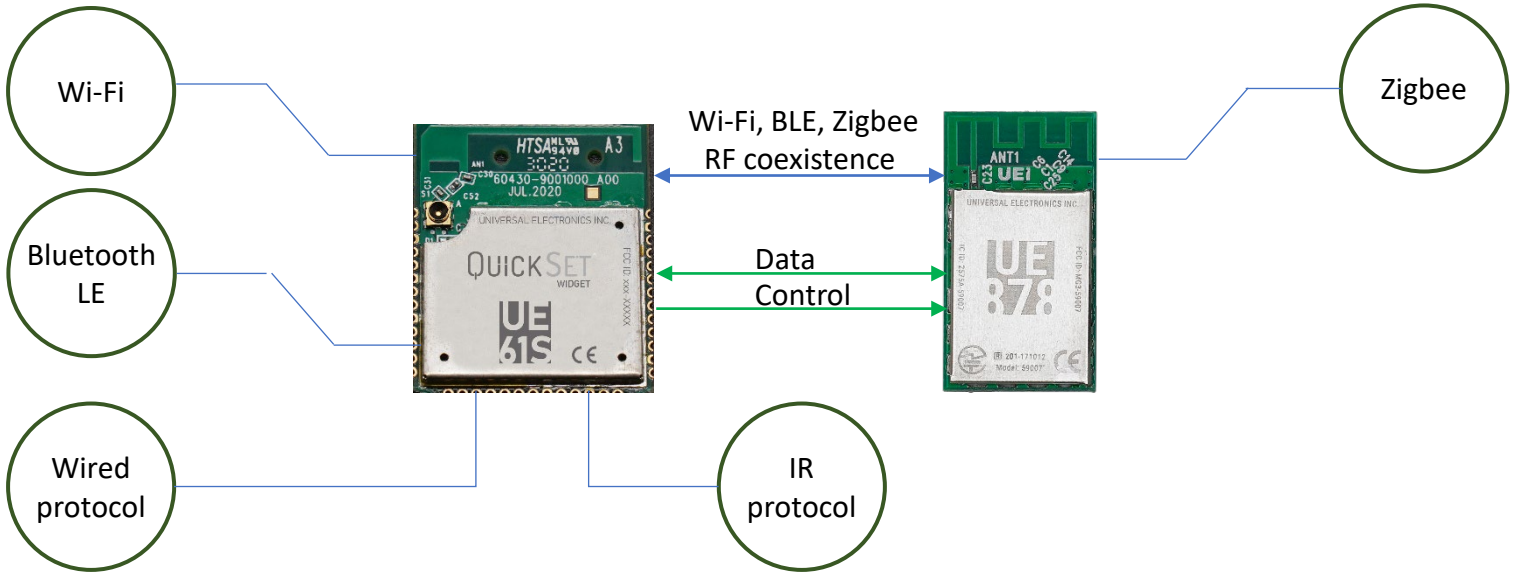
- Datasheet
- Application note
- Host app sample codes

Online documentation

Extensive connectivity capability



Extensive connectivity capability that includes WiFi, Bluetooth LE, IR, Wired Protocol, extendable to Zigbee coordinator/router through companion UE878 Zigbee module or multi-protocol SoC UE878. The multi-RF platform is optimized with RF co-existence design to ensure best possible RF performance.



Inside

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QUICKSET WIDGET

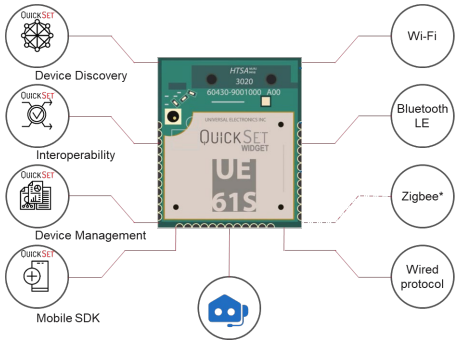
An off-the-shelf or turnkey **QuickSet Widget Module** with Virtual Agent and QuickSet pre-integrated, offered as managed hardware with **built-in security** from manufacturing throughout the lifecycle.

Optional Virtual Agent add-on that is built on top of QuickSet and driven by QuickSet Cloud underlying capabilities. Features are expandable through enterprise integration.

QUICKSET CLOUD

An end-to-end platform for discovery, control and interaction with devices including rules and automation framework for a truly connected experience. Leveraging the largest knowledge graph of devices, services are offered through QuickSet Cloud and QuickSet SDK delivery methods with edge intelligence built in and cloud scalability capabilities.

QuickSet Widget System Architecture



Lighting

Blinds

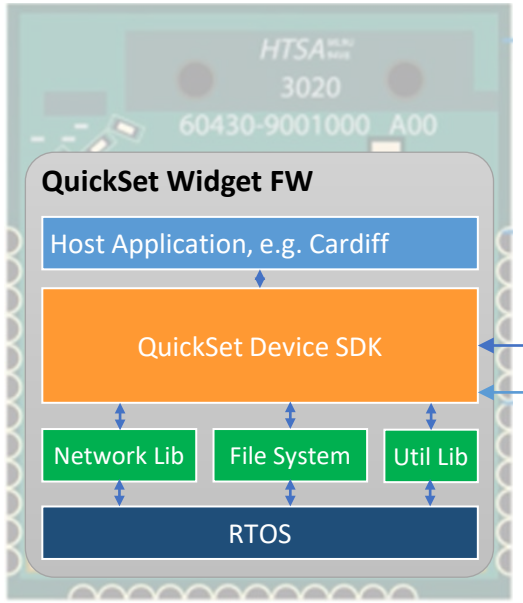
HVAC

Appliances

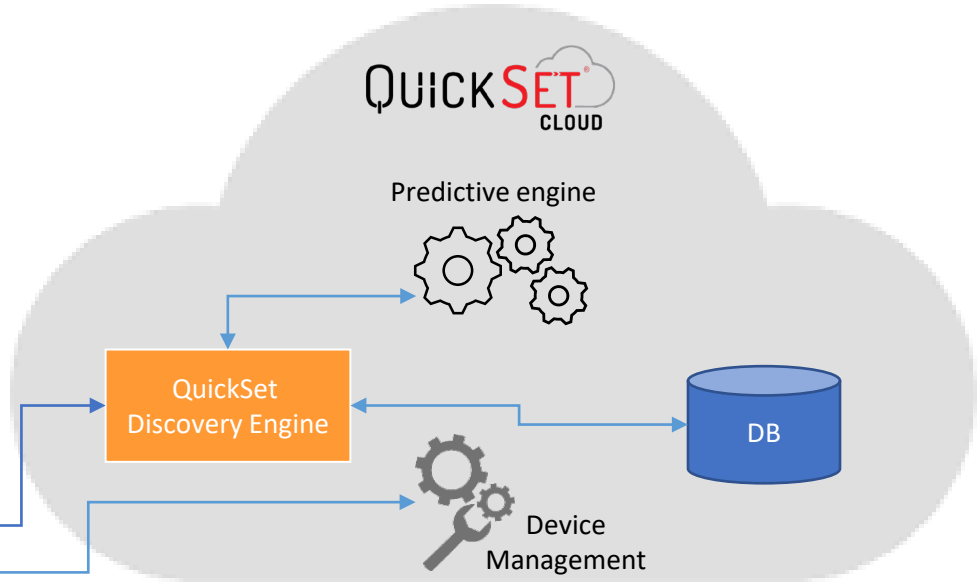
AV devices

And more….

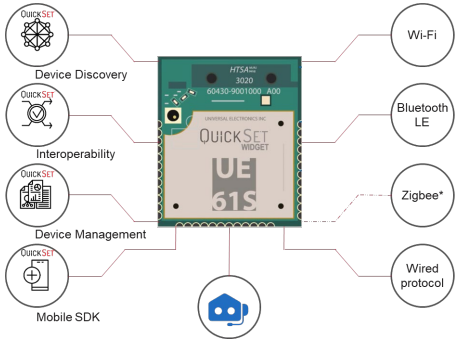
IP / IR*



QuickSet Lite API



QuickSet Widget UE61V Module Specification



Hardware Features

- Embedded WiFi4, BLE 5.0, optional companion Zigbee 3.0 module
- Advanced RF coexistence control for WiFi, BLE and Zigbee
- Advanced security and networking features, including SSL/TLS, IPv4/IPv6 networking, WPA/WPA2/WPA3, WPA-Enterprise, mDNS.
- 200MHz ARM Processor with DSP instruction
- Interface: UART, SPI, I2C, GPIO
- Display resolution up to 480 x 480, 16bits color per pixel
- Module dimension: 28mm x 35mm x 2.4mm

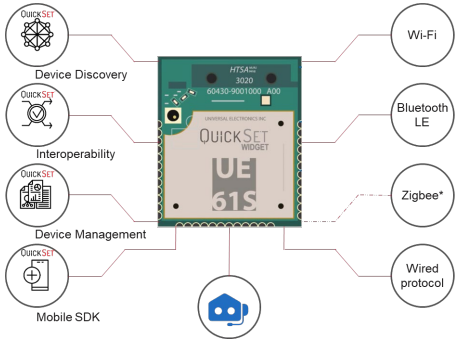
Software Features

- Secure remote access, device discovery, Interoperability as a Service, Zigbee network management, management dashboard, etc.

Works with QuickSet Cloud, nevo.ai platform for

- Secure, managed internet connection with backend server
- Secure, managed dashboard services
- Cloud-side device twin virtual device

QuickSet Widget UE61S Module Specification



Hardware Features

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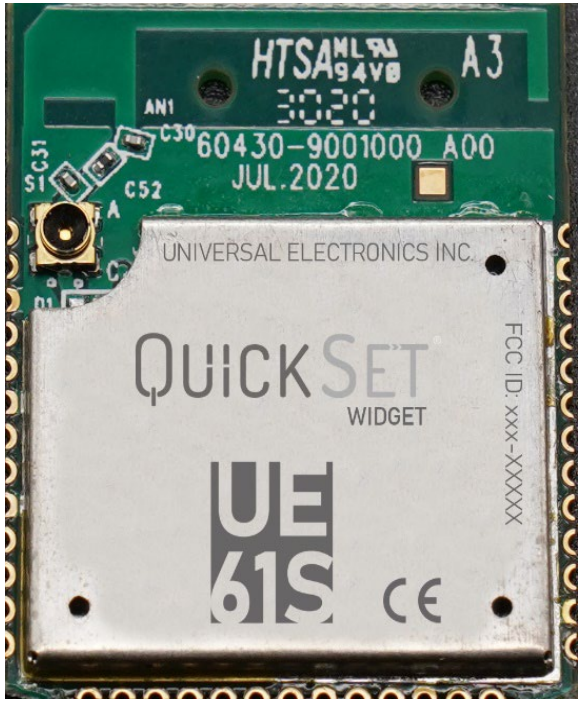
- Advanced RF coexistence control for WiFi, BLE and Zigbee
- Advanced security and networking features, including SSL/TLS, IPv4/IPv6 networking, WPA/WPA2/WPA3, WPA-Enterprise, mDNS.
- 200MHz ARM Processor with DSP instruction
- Interface: UART, SPI, I2C, GPIO
- Module dimension: 21.5mm x 26mm x 2.4mm

Software Features

- Secure remote access, device discovery, Interoperability as a Service, Zigbee network management, management dashboard, etc.

Works with QuickSet Cloud, nevo.ai platform for

- Secure, managed internet connection with backend server
- Secure, managed dashboard services
- Cloud-side device twin virtual device



- Module Portfolio (Jan 2021)

	UE878Z2x (UE878 Gen II)	UE671Zx (UE671-32K)	UE51W46B8Q5x	UE61SW46B8Q5x	UE61VW46B8Q5D
		Custom module			
Module size	15.3mm x 28mm	15.3mm x 28mm	22mm x 30mm x 2.4mm	21.5mm x 26mm x 2.4mm	28mm x 35mm x 2.4mm
Form Factor/ Pin	LGA/32	LGA/32	LGA, Stamp	LGA, Stamp	LGA, Stamp
Ext ANT option	Y	N	Y	Y	Y
RF Protocol	Bluetooth LE 4.2 peripheral, central	Zigbee 3.0 coordinator, router	WiFi 11b/g/n 1x1, 2.4GHz, Bluetooth LE 4.2	WiFi 11b/g/n 1x1, 2.4GHz, Bluetooth LE 5.0	WiFi 11b/g/n 1x1, 2.4GHz, Bluetooth LE 5.0
Module specific feature	Zigbee coordinator support up to 10 zigbee nodes	Customer specific interface protocol			TFT LCD RGB/i8080 interface, LCD buffer
QuickSet Cloud compliant	N	N	QuickSet 5.0, Virtual Agent	QuickSet 5.0, Virtual Agent	QuickSet 5.0, Virtual Agent
Operating voltage	3.3V	3.3V	3.3V	3.3V	3.3V
Flash	512KB + 512KB		2MB	2MB	2MB ~ 4MB
SRAM	64KB	32KB	256KB + 4MB	512KB + 4MB	512KB + 4MB
I/O	UART, GPIO	UART, PWM, GPIO	UART, SPI, I^2C to host, GPIO for peripheral	UART, SPI, I^2C to host, GPIO for peripheral	UART, SPI, I^2C to host, GPIO for peripheral, RGB/i8080
HW/SW Development Kit	N	N	Y	Y	Y
Schedule	Bluetooth LE: MP Zigbee : Q3 2021	MP	Q4 2021	PP: Feb 2021	PP: Feb 2021

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Channels

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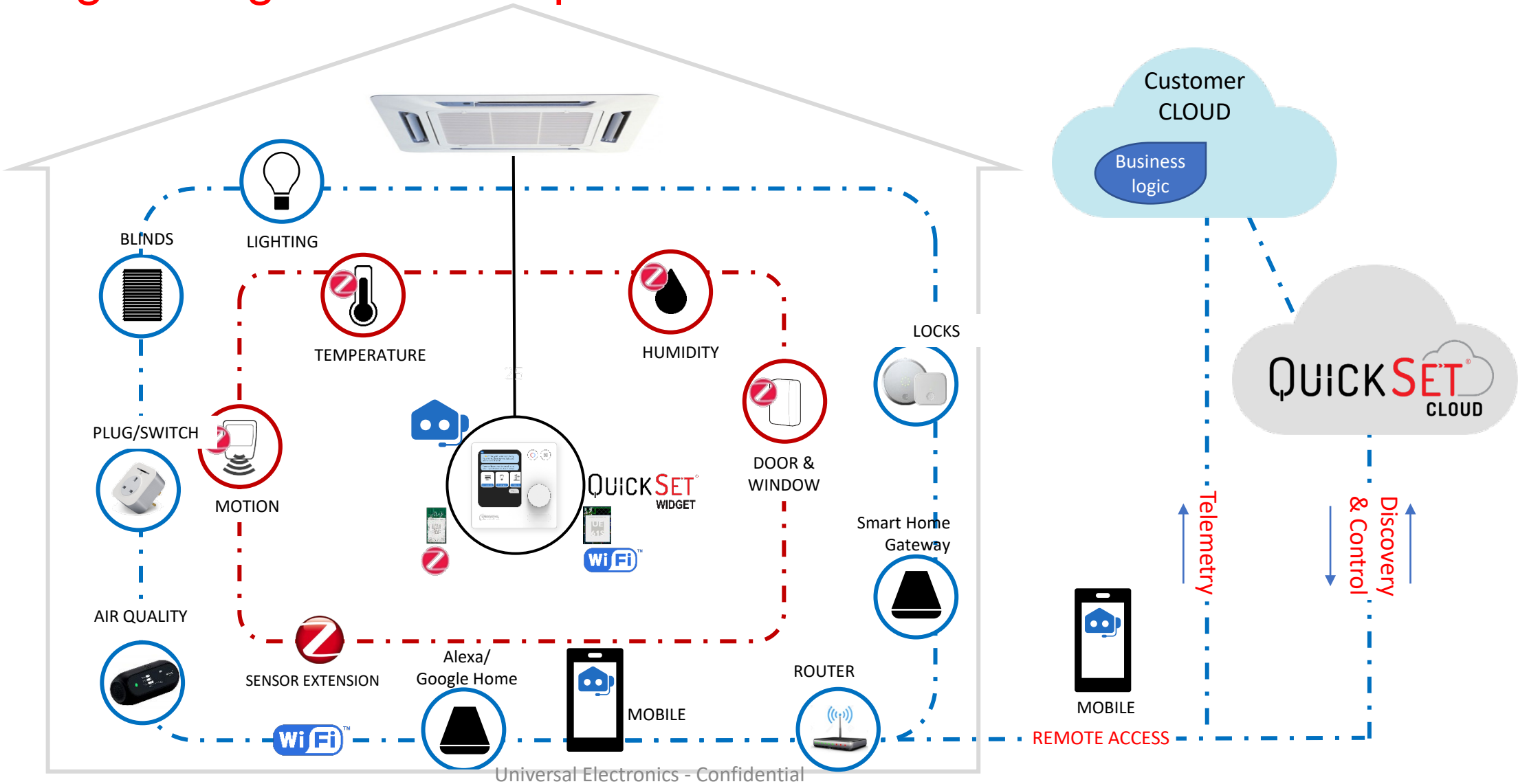
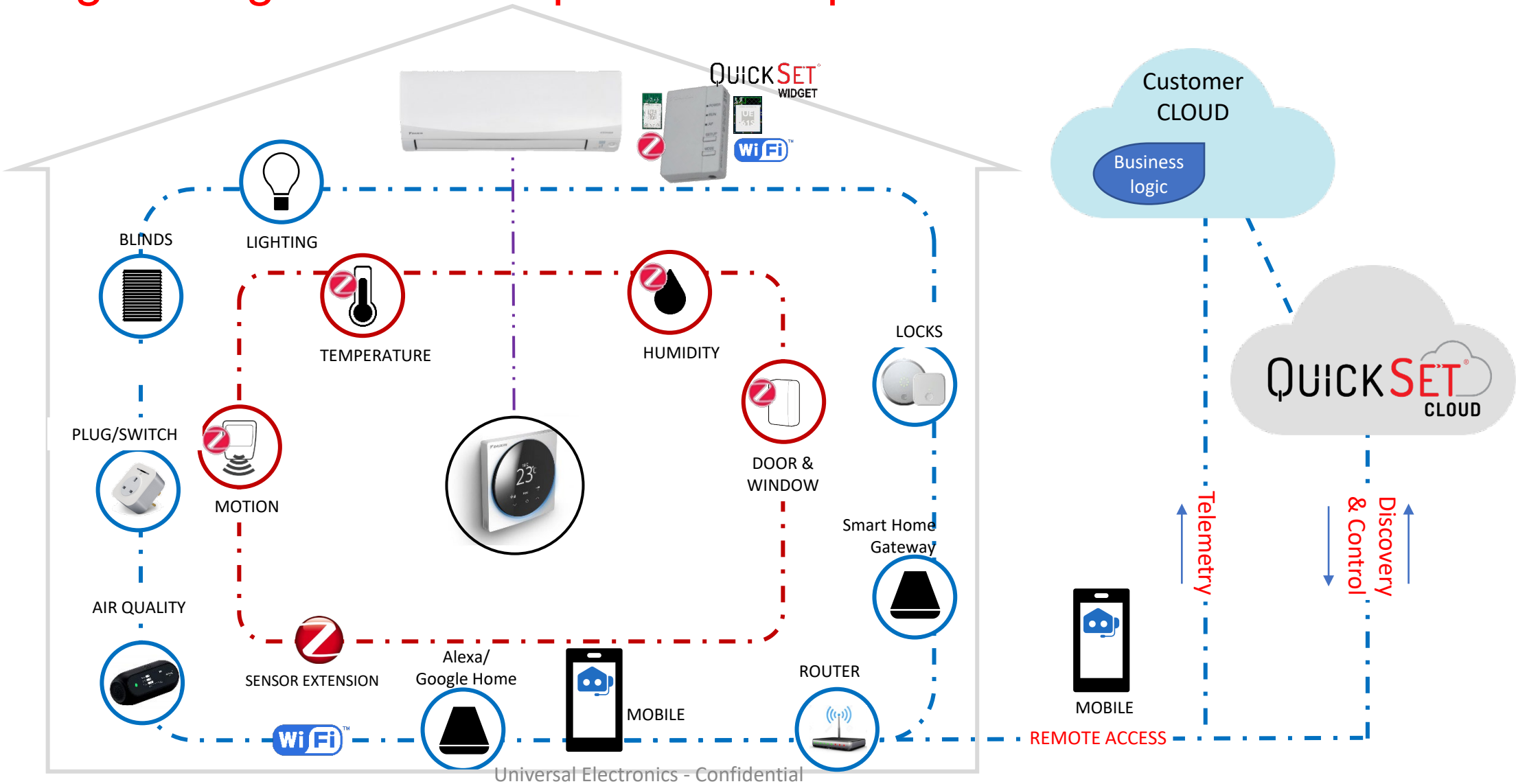
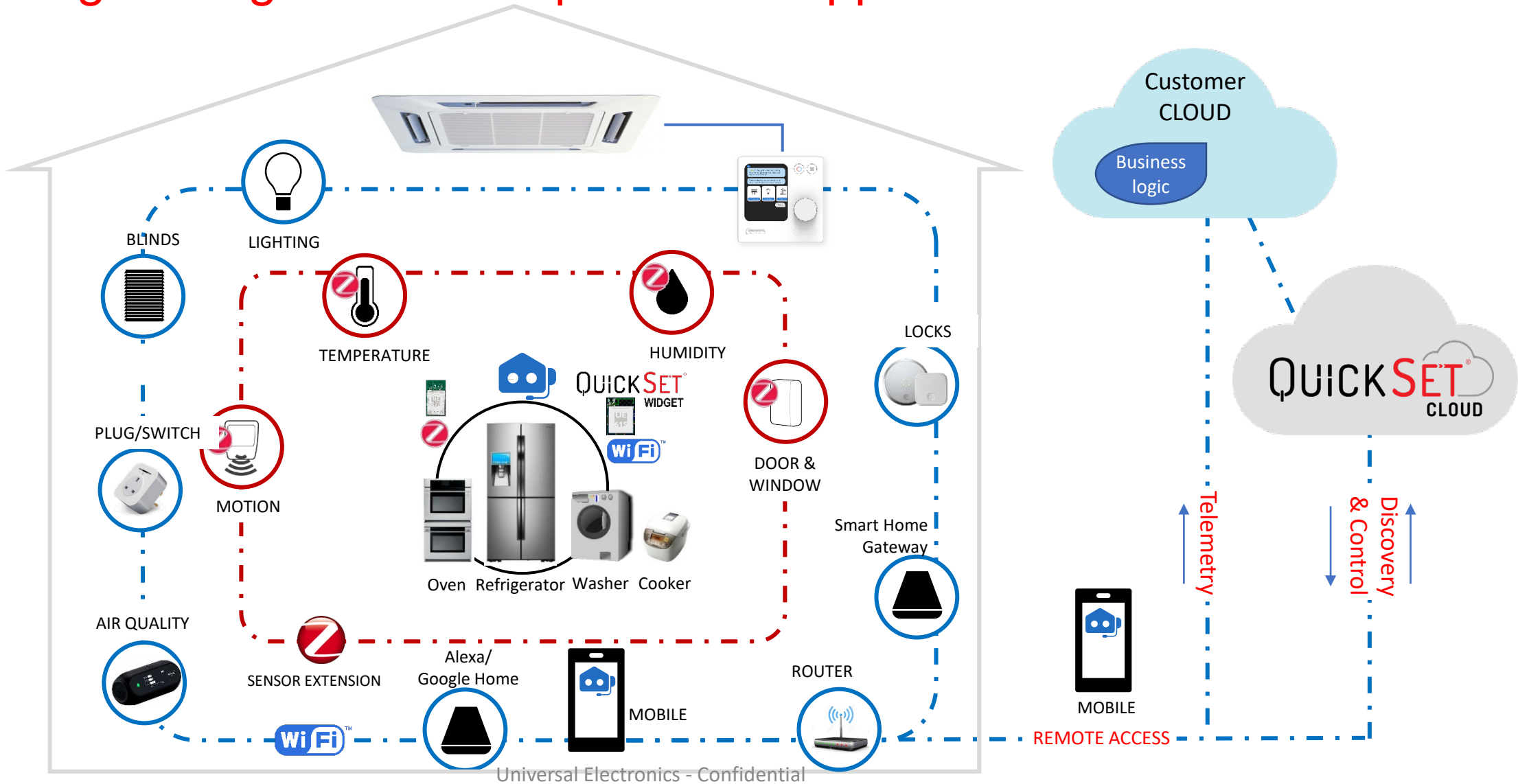
Enabling Manageable and Updateable Central/Ducted HVAC



Enabling Manageable and Updateable Split HVAC



Enabling Manageable and Updateable Appliances

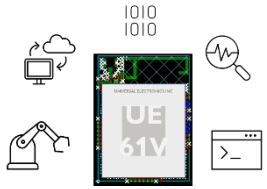


Lifecycle support

From product creation to lifecycle maintenance

Proof of concept or pre-development

- Ready to use QuickSet Widget Module eval kit
- Service Desk user account for QuickSet Cloud

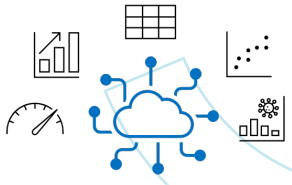


Product development and integration

- Sample code for host interface,
- Fully qualified connectivity libraries
- Professional engineering services

Mass production and deployment

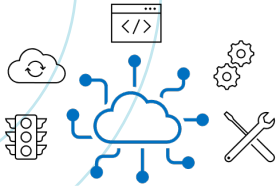
- Secured & low cycle time manufacturing tools
- Simple & secured WiFi or Zigbee commissioning method



Manage and monitor

- Device management dashboards and back-office tools
- Interoperability as a service
- Telemetric for customer preventive, predictive maintenance logic

compatibility with new and existing devices



Maintenance and update

- Remote troubleshooting, fixes
- Remote configuration update
- Secured firmware OTA

efficient use of resources

Ecosystem of Services

Built-in Services

Services core to the functionality of QuickSet Widget which are built in and supported through QuickSet Cloud and Virtual Agent

Including

- Interoperability as a Service
- Device management including OTA
- Device discovery and fingerprinting
- Device control

Enterprise Integration Services

Integration with existing services, offered as professional services. These integrate with existing enterprise infrastructure and allow our customers to remain in control of their own customers.

Including

- Preventive maintenance
- OEM specific HVAC logic

Partner Services

Partnerships with top vendors to enable curated set of monetization opportunities for our customers.

Examples

- Onsite repair service

QuickSet® WIDGET

QuickSet Widget together with QuickSet Cloud offered as an end-to-end IoT connectivity platform optimized for interoperability, lifecycle management applications to accelerate introduction of new services.

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