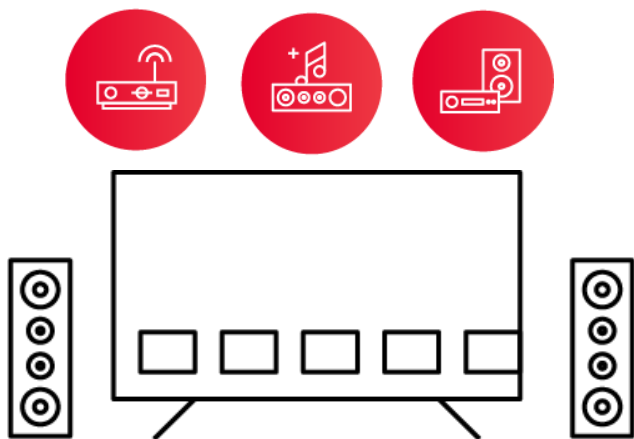
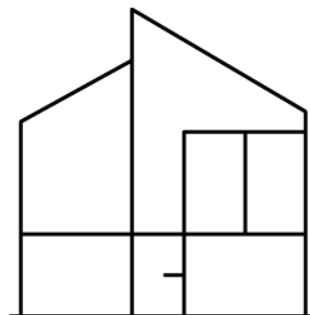
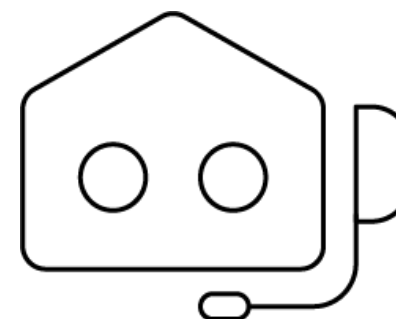

QuickSet® for SmartTV



Better Entertainment Experience



Better Smart Home Experience



Better Support Experience

OUR SOLUTIONS



QuickSet Cloud, software and services



Universal Electronics - Confidential

QuickSet Cloud is the industry standard for home control

- Launched in 2008, QuickSet has been deployed in over 600M devices with over 288B transactions
- Device and system knowledge base for discovery, control protocols, functions and system behavior
- Control data for over 28 million unique fingerprints across nearly 1,2 million devices from 13,000 consumer brands, offering true interoperability between home entertainment and smart home devices and ecosystems
- QuickSet Cloud architecture is built with control engines and discovery, automation and management frameworks with capability for IP, RF4CE, Zigbee, Bluetooth and Infrared

The challenge for SmartTV's

Keeping Users on the TV Platform

Today's Entertainment System has :

- Many connected devices
- Many ways to consume content - Apps, channels, VoD
- Various communication protocols
- Different devices offering similar contents and Apps.

Consumers habits are changing:

- Different family members have different content and device preference for content consumption.
- Multiple content sources and devices are used simultaneously.
- First “new” experiences determine future “habits” and usage preference.
- Users expect devices to work together seamlessly



Enable the TV to be the main content source whilst providing control to of the connected devices with the TV RCU.

Enhancing the functionality

Increase the Smart TV relevance

Today's Smart Home System has :

- Multitude of gateways or hubs with multiple ecosystems and voice assistants in the home that do not interact.
- Many hubs do not interact with most entertainment devices

TV at the center of the Smart Home:

- The Smart TV is always connected, provides the largest display to engage with consumer, and often voice enabled
- Matter will reduce some of the interoperability challenges
- UEI QuickSet with Matter inside can cover the best interoperability between entertainment + smart home devices, between connected + legacy devices.







Increase the TV relevance by blending Entertainment and Smart Home into one seamless experience

ROADMAP TO A SEAMLESS CONTROL EXPERIENCE

UEI QuickSet features

- Automatic Discovery, Setup and Control of Entertainment Devices
- Extend control with seamless PayTV control including Non-line of sight control using BLE & RF4CE
- Expand Discovery and Control to Content within devices
- Blending Entertainment and Smart Home experiences

	Connected STB's	TV Manufacturers	Smart Speaker STB's	Voice Assistant
Partner(s) Tier 1 Customers with commercially deployed products.				
Key Feature(s)	<ul style="list-style-type: none">• Control of TV's & AVR's• Quickset Insights	<ul style="list-style-type: none">• Control of connected Devices• Smart Home Control	<ul style="list-style-type: none">• Control of TV's	<ul style="list-style-type: none">• Universal Control for: TV, STB, Audio, DVD, Projector, Fan, Air Purifier, Humidifier, Robot Vacuum Cleaner, Lighting and Air Conditioner

The value of QuickSet for SmartTV

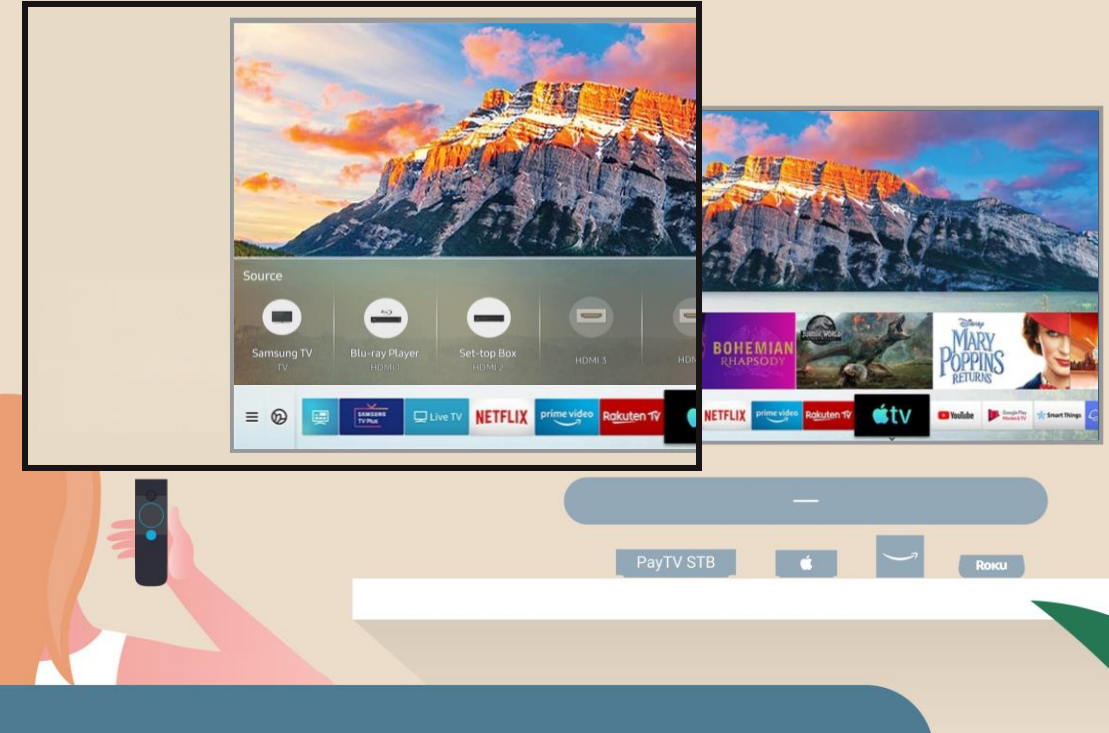
The TV as the main entertainment controller

For devices & content

MAKING SURE THAT ALL CONNECTED DEVICES WORK SEAMLESSLY

Frictionless control of all content

- QuickSet uses **HDMI and IP fingerprints** of connected devices and compares them to device profiles to determine optimal control codes
- **Directly tune** into channels and content across devices
 - Universal Content Dashboard – Live and Recorded TV, OTT Apps and Native TV Content!
 - User sees their Content Source Name instead of an Input name
 - Works even with an AVR in the middle!
- QuickSet automatically **maps the control functions** for the content source to right keys on TV Remote Control
 - ex. Ch+/Ch- and Guide keys are routed to STB

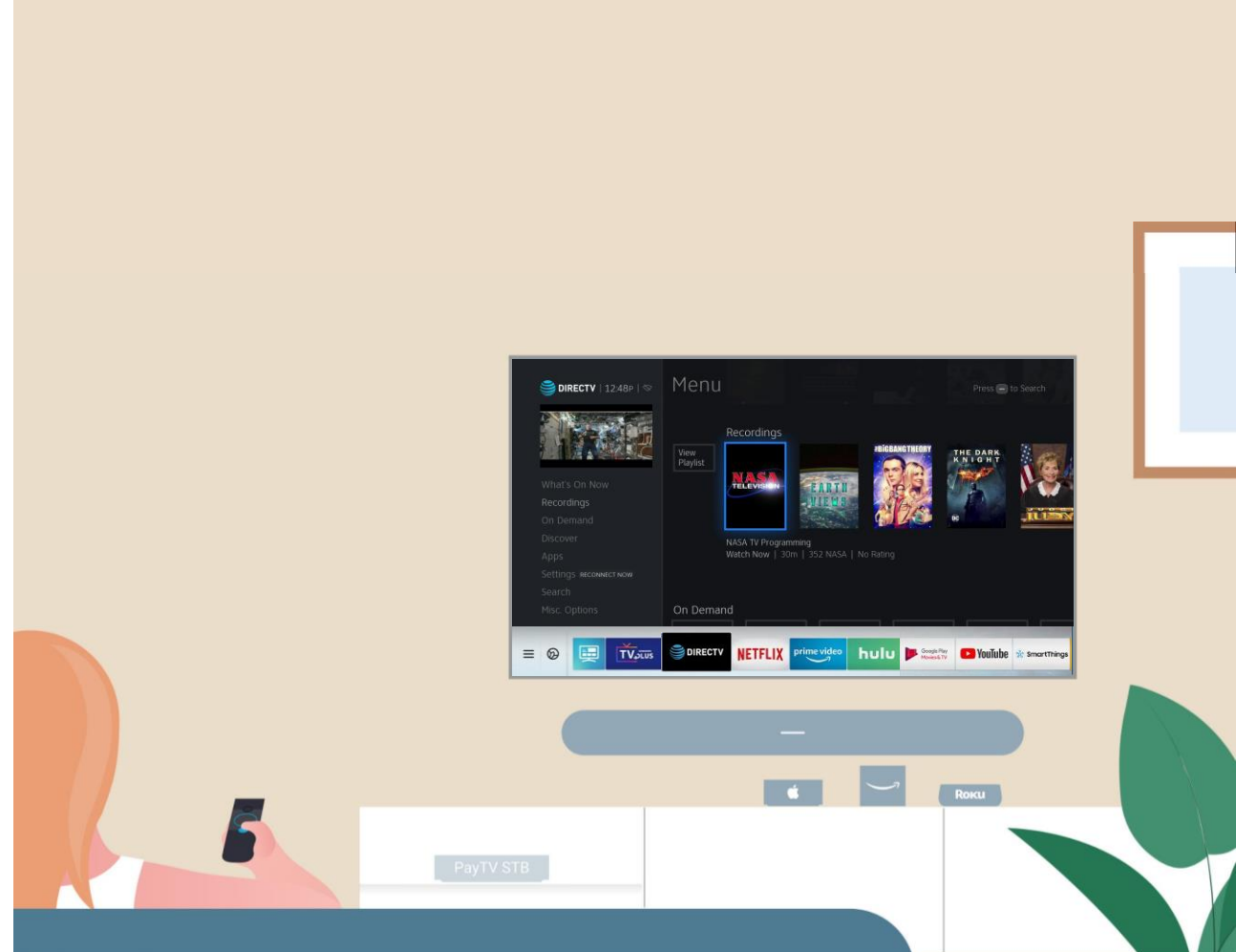


The TV remote is the remote to provide unified control experience across SmartTV, Live TV provider and connected devices

MAKING SURE THAT NEW CONTROL EXPERIENCE ARE
ON PAR WITH PREVIOUS EXPERIENCE

Seamless access to Pay TV content

- QuickSet Supports ZIGBEE RF4CE* Control across all Top Providers within North America:
 - Comcast
 - Spectrum
 - DIRECTV
 - Dish Network
 - Cox Communications
 - Many more

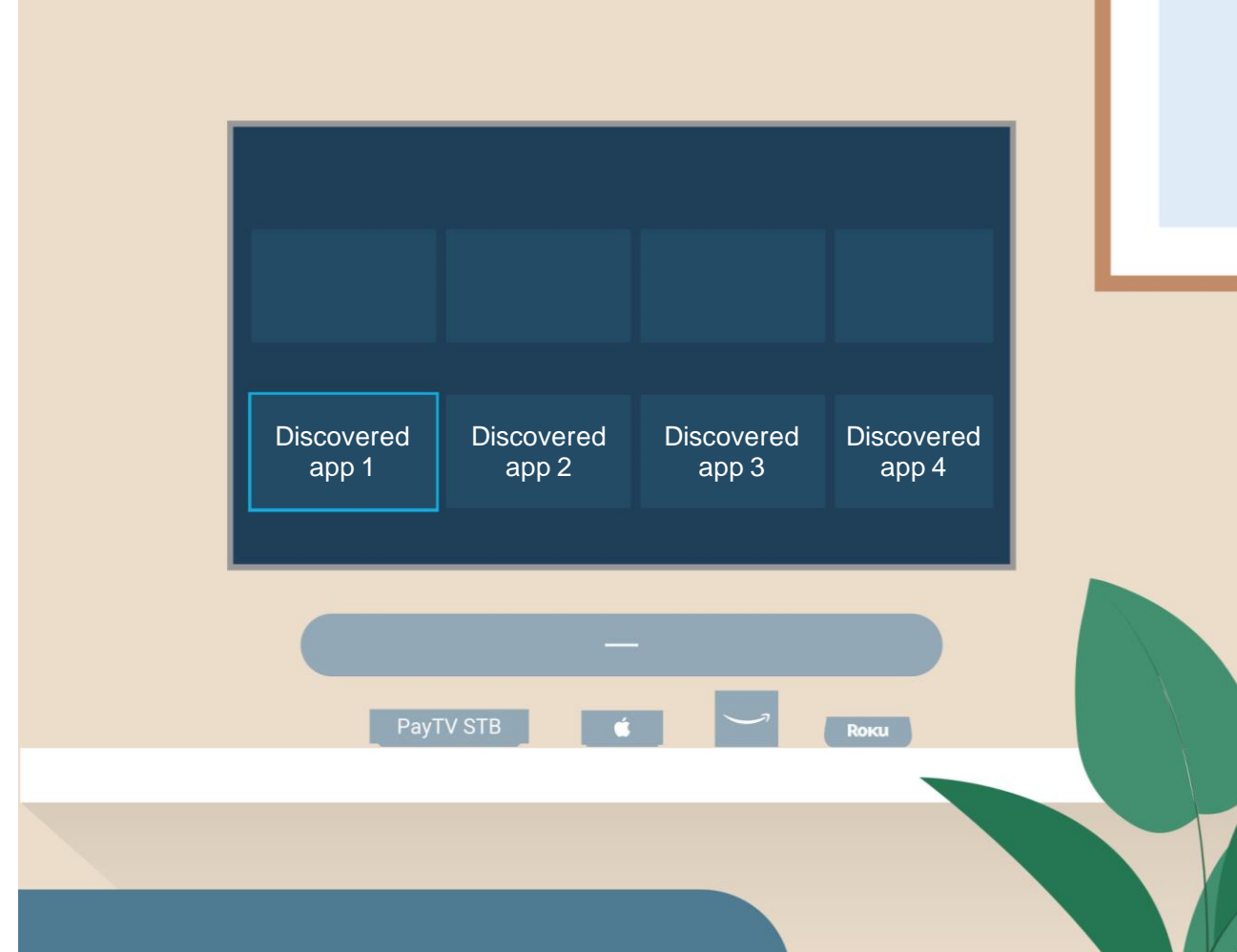


The addition of RF4CE provides NLOS control for the Top NA Pay TV providers accounting for over 70% of the total North America Pay TV market.

USE IP DISCOVERY & CONTROL CAPABILITIES

QuickSet for Connected AV Home Entertainment

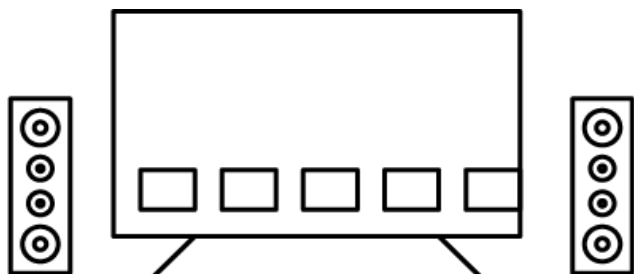
- Expand discovery & control capabilities across devices
- Use IP control capabilities
 - Discover Smart Home devices in the home network
 - Add control capabilities for IP devices, such as Sonos speakers
- Provide insights
 - Which VOD apps are installed
 - How often are VOD apps used
 - From which device are Apps used



Discover & control devices in the home network and their installed apps

TV Remote as the navigator for the Smart Home

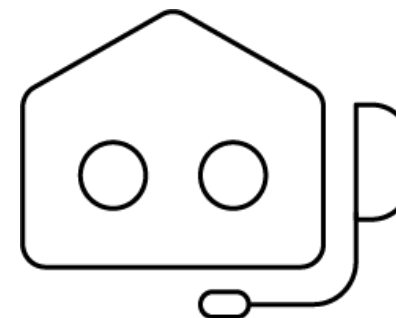
Blending smart home and entertainment experience



Better Entertainment Experience



Better Smart Home Experience



Better Support Experience

CURATED LIST OF SUPPORTED DEVICES

Smart Device Expansion (IP)

The Works With QuickSet program is a curated ecosystem blending the entertainment and smart home experiences. Ensuring a product is compatible with what consumers already have in their home including existing entertainment devices, smart speakers and a wide range of IoT Smart devices such as:

Lights	Switches/ Plugs	Thermostats	Hubs	Locks	Cameras/ Doorbells
<ul style="list-style-type: none"> •Philips Hue •LIFX •OSRAM •IKEA •TP-Link •Yeelight •Eufy •Sengled •Nanoleaf •Hive •Wiz •Nexlux •Magic light •Smarthings lighting •... 	<ul style="list-style-type: none"> •Belkin Wemo •TP-Link •Leviton •Etekcity •D-Link •Hive •IKEA •iHome •Wyze •Awair •Homematic •Eufy •ConnectSense •Meross •... 	<ul style="list-style-type: none"> •Honeywell •Hive •Radio •Thermostat •Tado •Netatmo •... 	<ul style="list-style-type: none"> •SmartThings •Philips Hue •IKEA •Hive •Wink •Insteon •Bosch •Homeatic •Hunter Douglas •OSRAM •August •Sengled •... 	<ul style="list-style-type: none"> •August •Yale Assure •... 	<ul style="list-style-type: none"> •Amcrest •August •D-Link •Doorbird •Garmin •...

WORKS WITH

QUICKSET

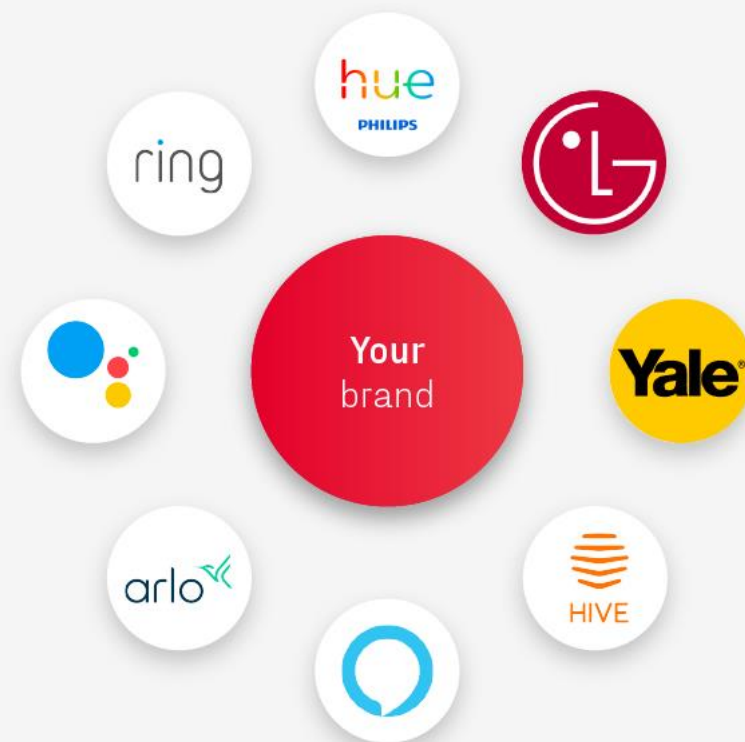


Provide curated list of devices for easy entry into Smart Home lifestyle device starting with Lights, Plugs, Thermostats...

COMPATIBILITY WITH DEVICES AT HOME IS THE
NUMBER ONE DRIVER FOR PRODUCT PURCHASES

Interoperability as a Service

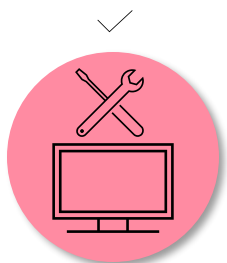
- Addresses consumers' needs as well as manufacturers' challenges
- Ensures the product is compatible with what consumers have in their home whether it be an existing hub, smart speaker or automation platform as well as those devices Powered by QuickSet
- With Matter Certification, QuickSet's interoperability is now extended to all Matter Capable devices irrespective of brand and type!



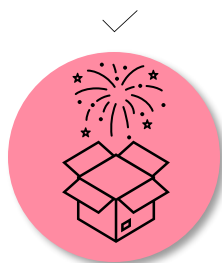
Interoperability as a Service



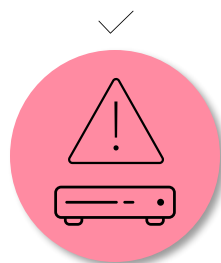
Self support service for



Guided Device
Onboarding



Feature Discovery



Troubleshooting

When combined with QuickSet it is enhanced with the knowledge of existing devices at the home including real-time access to secure remote troubleshooting features.



An integrated tier 0 support service for
Entertainment and Smart Home devices.



Consumer Electronics



Guided Self-Help for AV and Smart Home Devices



Feature Discovery of WWQS* Devices



Troubleshoot Interoperability with Popular STBs & AV Devices



CE Branded Experience



An integrated tier 0 support service for Entertainment and Smart Home devices.

Matter

Matter addition to QuickSet

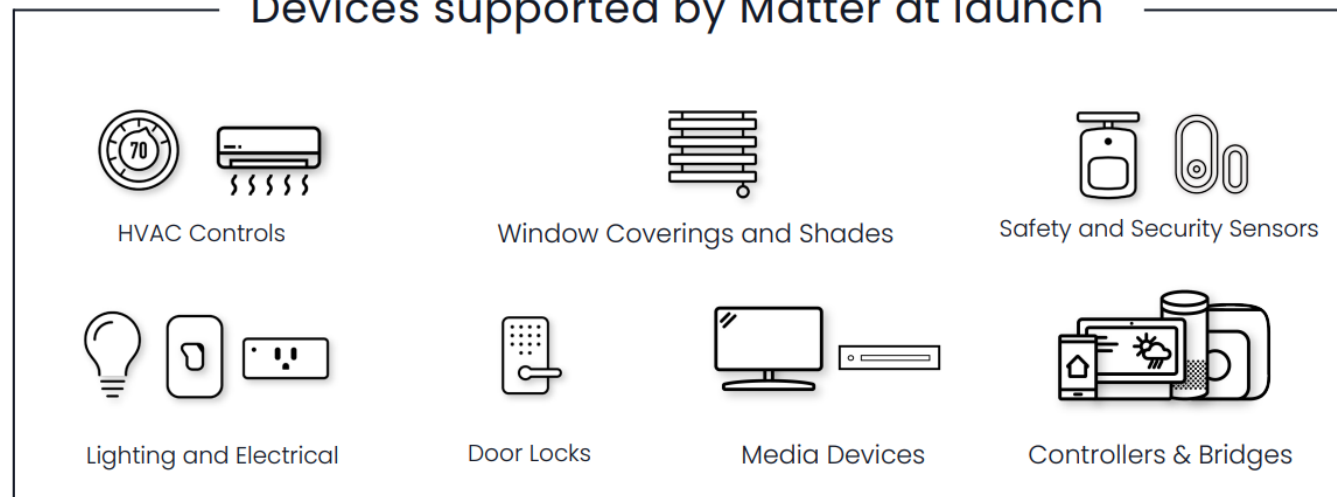
Matter 1.0 Highlights

New standard for the Smart Home that promises interoperability, security, reliability and simplicity

- Is a local protocol working on LAN
- Supports lights, locks, shades , sensors, controllers, bridges, HVAC etc.
- Provides interoperability across devices and controllers
- Supports multiple controllers in the home through multi-admin
- Supports bridge device type for bridging non-matter devices
- Simplifies onboarding of devices
- Open-source SDK for easy adoption



Devices supported by Matter at launch



With the Promise of MATTER, Why QuickSet?

The Reality of the Industry

The goal of the standard is to make all smart home devices interoperable BUT **not all devices will be Matter addressable.**



Strategy Alignment

The Matter strategy does not align with some manufacturers' strategy
e.x. certain providers do not wish to participate in the multi-admin nature of Matter.
e.x. Most non-Android TV STB will not support Matter

Technical Feasibility

Majority of deployed devices simply cannot achieve matter compliance due to hardware constraints
e.x. Some deployed smart home devices only have sufficient RAM and Flash to run either zigbee, Thread or Wi-Fi protocol, but insufficient to add Matter stack on top of that which today is ~ 12MB

Upgrade Path

Many devices will not be matter upgraded
e.x. Signify has announced that it's updating the bridge for its Philips Hue smart lights to support Matter while Belkin (Wemo) announced that existing Wemo products will not be upgraded to support Matter

What Matter Does Not Do?

Does not replace existing proprietary and standard protocols
Not interoperable and compatible with all devices existing in the home today

- Does not replace standards like Zigbee, Zwave etc. or other proprietary smart home IP Control protocols
- **Local Only.** Is not a Cloud to device technology, remote access is not available natively
- Does not support some of the major device types including Cameras, Doorbells, vacuums and more
- Does not provide automation framework ex: Scenes are provisional
- No standardize multi-admin onboarding process. ex: steps on Apple, Google, Amazon and SmartThings are all different and nested
- Multiple ways to put device in advertising mode, left to manufacturer discretion ex: button press, power cycle, menu selection
- Onboarding of existing devices that are upgraded to Matter is tedious at best ex: No QR Code on device
- Not all existing devices are capable of upgrade to Matter ex: Zigbee/Zwave
- Does not come with integrated support for setup and troubleshooting



QuickSet with Matter

Better Together

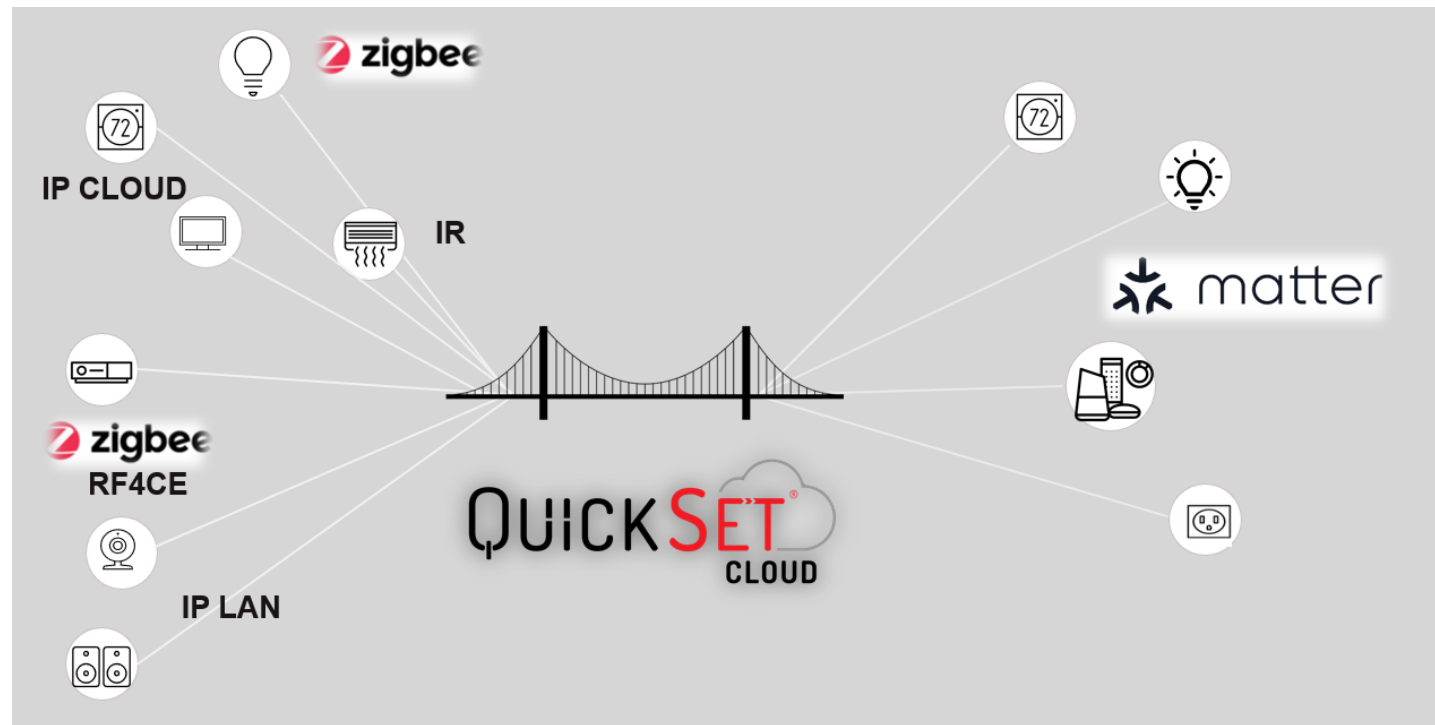
- QuickSet's Interoperability as a Service provides **interoperability and compatibility with old and new** devices across protocols
 - IR, ZIGBEE, ZIGBEE RF4CE, CEC, IP-LAN, IP-CLOUD, MATTER, BLE
- Additionally, it brings **bridging capabilities**
 - ZIGBEE Bridge, MATTER Bridge
- QuickSet's integrated support walks the users through **onboarding and troubleshooting** of devices
- QuickSet's Remote Control and Troubleshooting **complement Matter's local control with remote capabilities**
- QuickSet Automation framework with Rules Engine and Device scripting allows **for whole home automation** across QuickSet compatible and Matter capable devices



QuickSet as a Matter Bridge (Available in 6.0)

Bridging non-Matter Devices into Matter Ecosystem

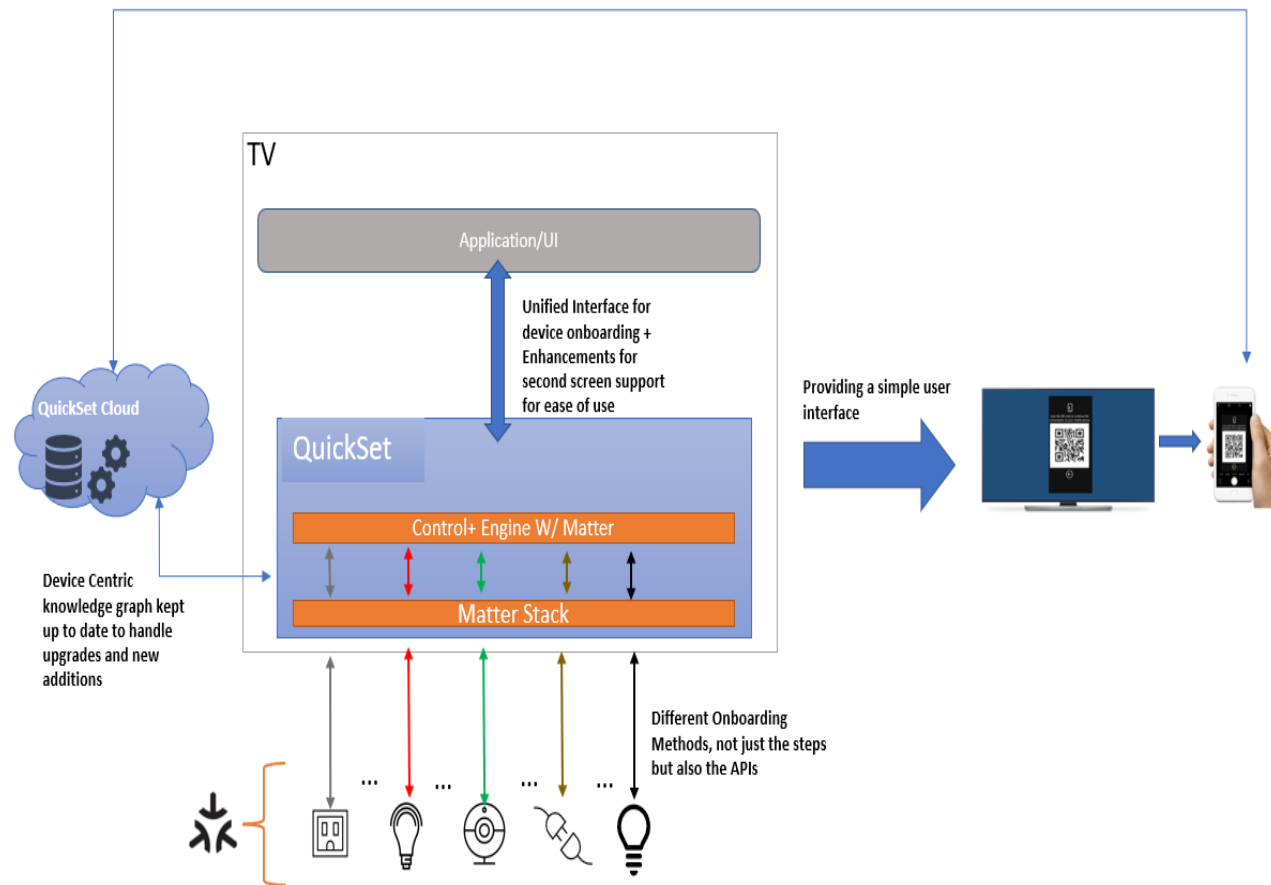
- Device categories not covered by Matter ex: Cameras, Doorbells etc.
- Existing devices within the home such as Complex Aircon, AV devices, etc.
- Devices that won't be upgraded to Matter ex: Belkin, IKEA etc.
- Smart home devices with varying protocols ex: Zigbee, Proprietary etc.



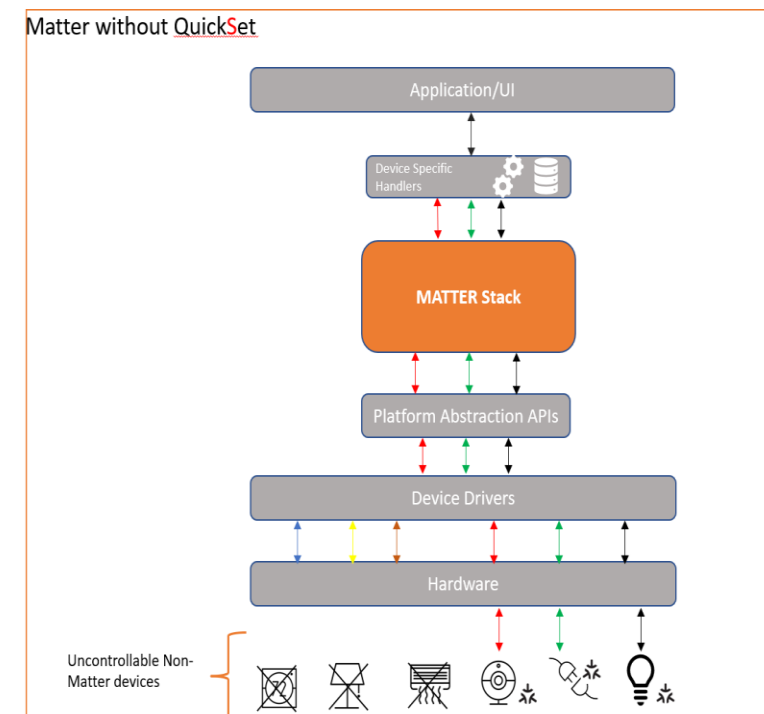
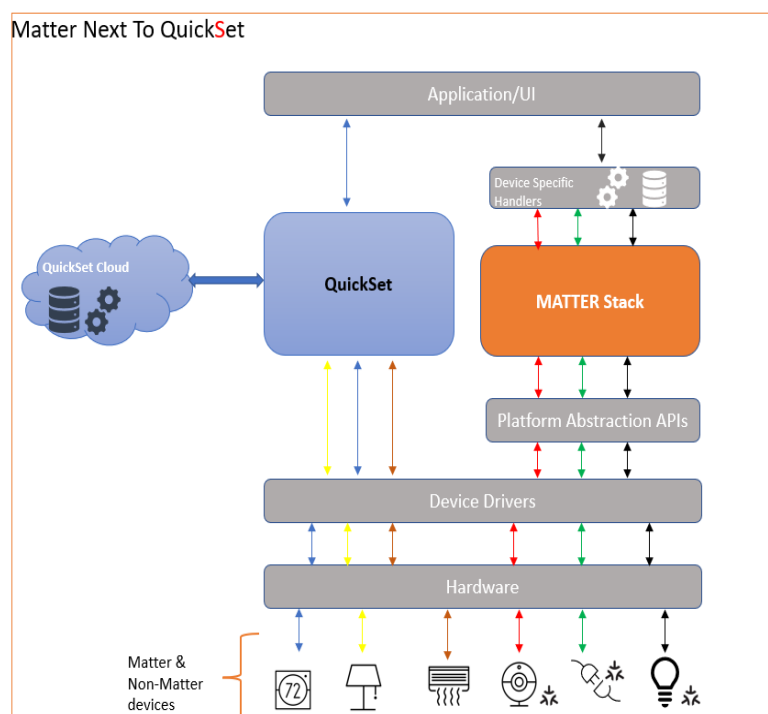
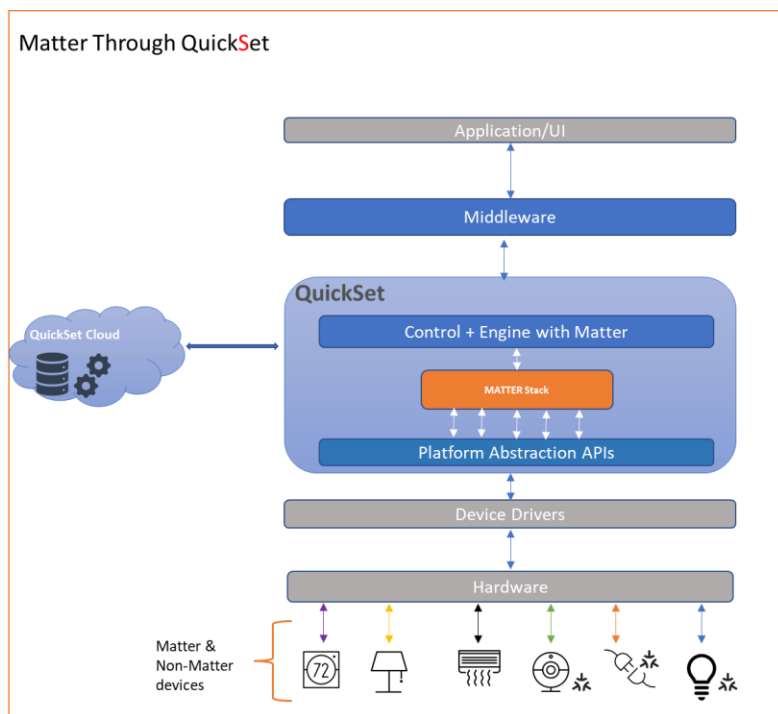
Control+ Engine W/ Matter

Simplifying Matter Open-Source SDK

- How does it work?
 - **Knowledge graph** that understands device specific steps and APIs for onboarding of both Matter devices as well as controllers
 - **Continuous testing, updating and maintaining** device knowledge graph to include new variations, and regions as an on-going dedicated effort
- **Simplifies onboarding** of devices through device specific steps in conjunction with offerings like Virtual Agent
 - First time onboarding
 - Multi-Admin onboarding
- Simple and Unified API and device model to discover, onboard and control Matter enabled and legacy devices



QuickSet and Matter



Blue: UEI, Grey: Customer, Orange: Matter Open-Source SDK

Thank you!

