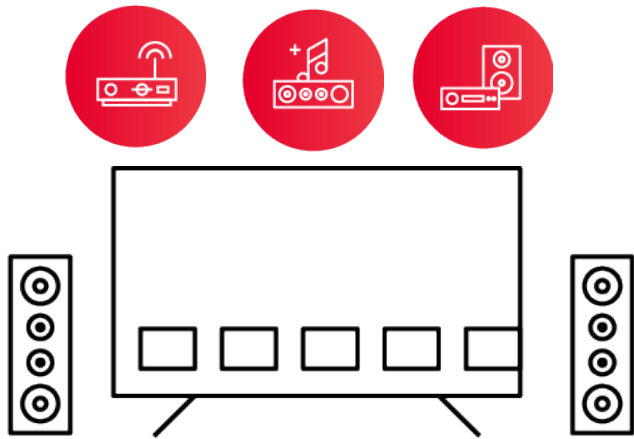
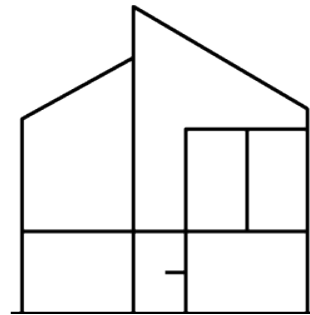
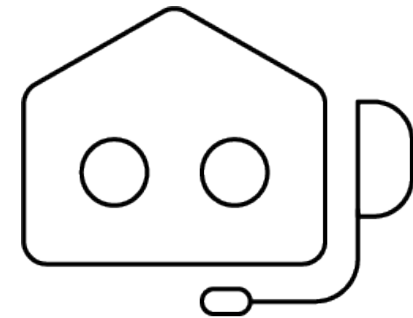

QuickSet for SmartTV



Better Entertainment Experience



Better Smart Home Experience



Better Support Experience

OUR SOLUTIONS



QuickSet Cloud, software and services



Universal Electronics - QuickSet

QuickSet Cloud is the industry standard for home control

- Launched in 2008, QuickSet has been deployed in over 600M devices with over 225B transactions
- Device and system knowledge base for discovery, control protocols, functions and system behavior
- Control data for over 27.6 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.				 <p>Samsung Galaxy Home Mini</p>
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

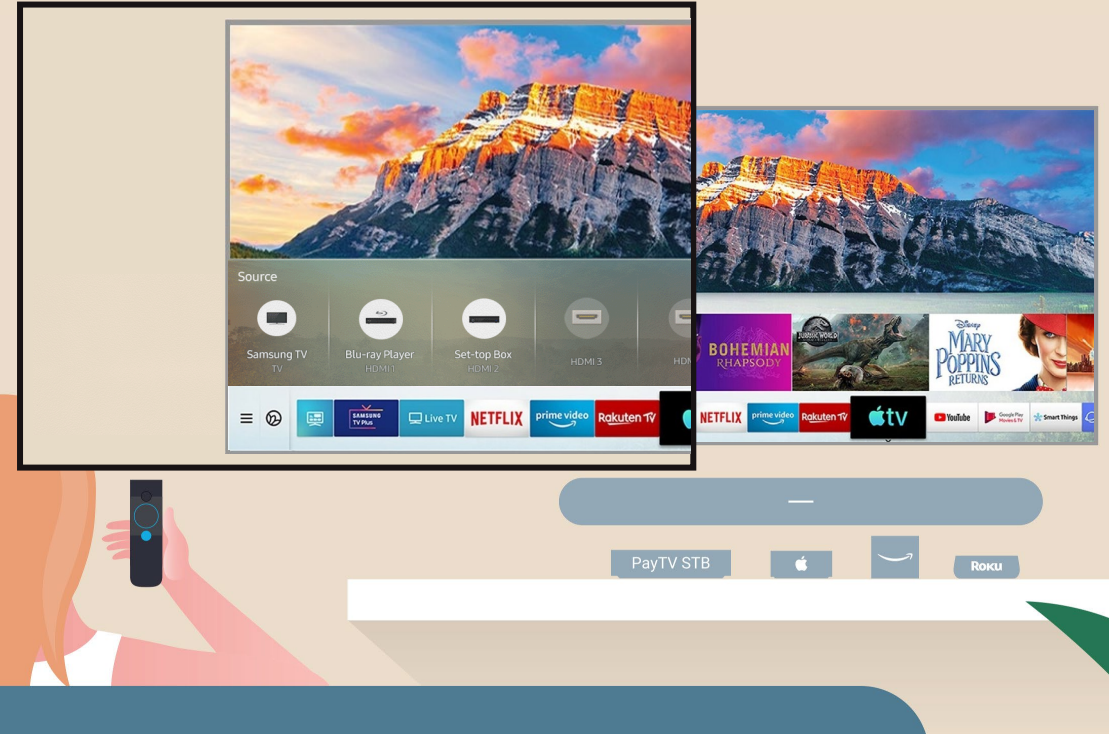
The TV as the main entertainment controller

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

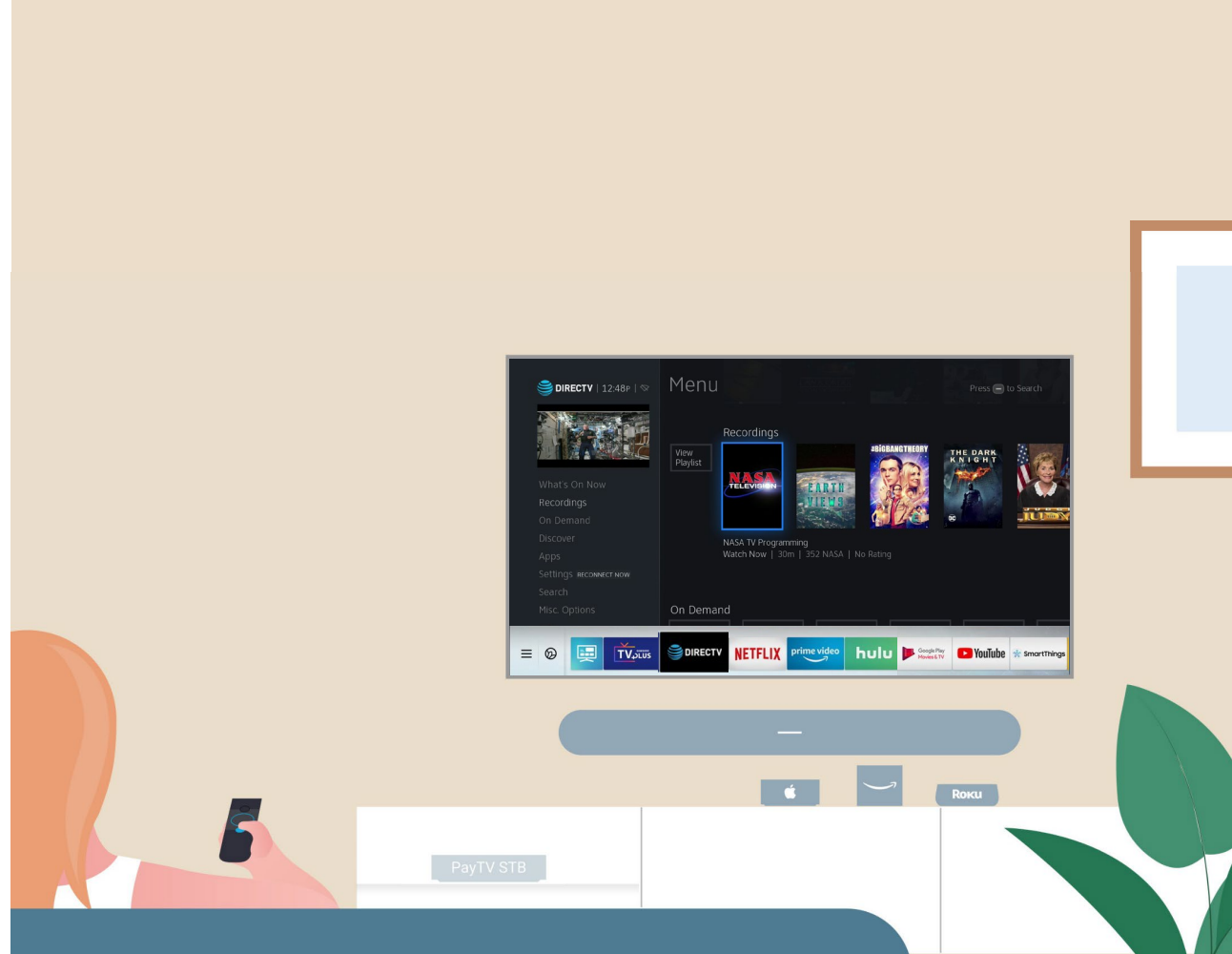


The TV remote is the remote to provide unified control experience across SmartTV, Live TV provider and connected devices

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

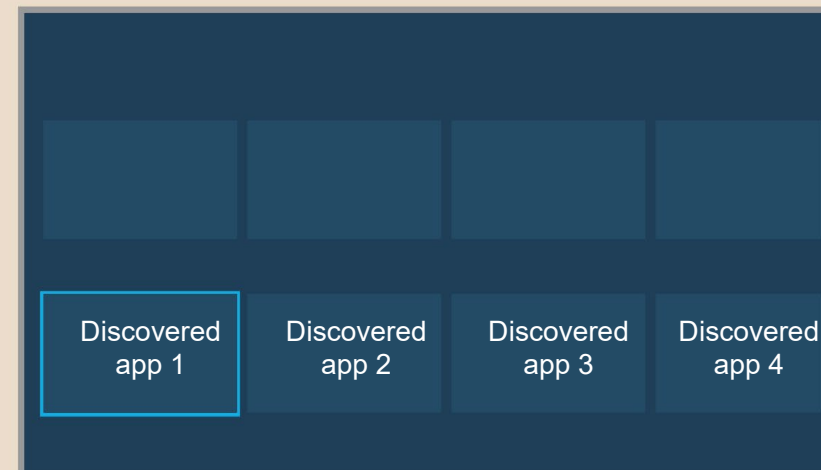


The addition of RF4CE provides NLOS control for the Top NA Pay TV providers accounting for over 70% off the total North America Pay TV market.

USE IP DISCOVERY & CONTROL CAPABILITIES

QuickSet for Connected AV Home Entertainment

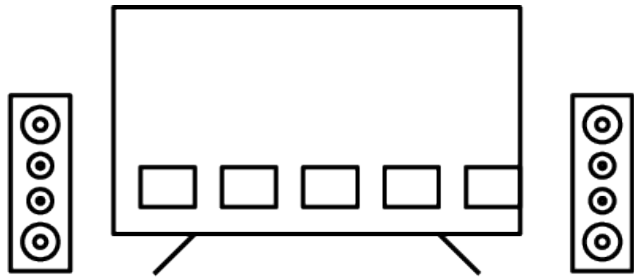
- Expand discovery & control capabilities across devices
- Use IP control capabilities
 - Discover Smart Home devices in the home network
 - Add control capabilities for IP devices, such as Sonos speakers
- Provide insights
 - Which VOD apps are installed
 - How often are VOD apps used
 - From which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



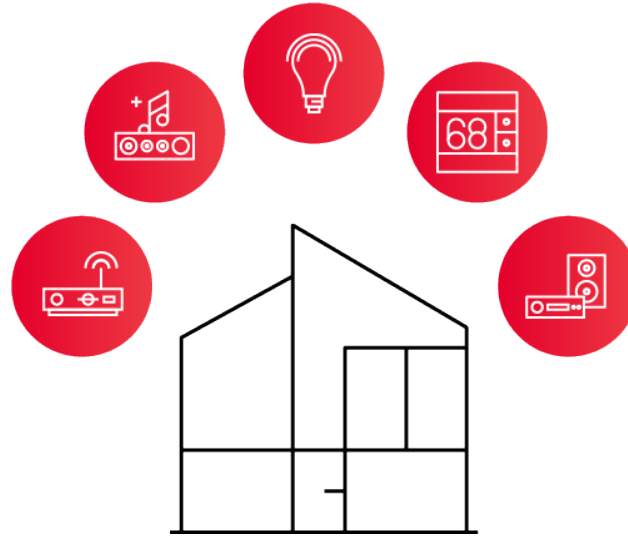
Discover & control devices in the home network and their installed apps

TV Remote as the navigator for the Smart Home

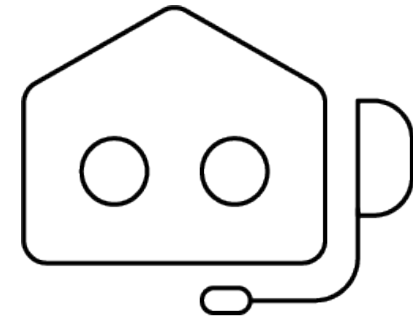
Blending smart home and entertainment experience



Better Entertainment Experience



Better Smart Home Experience



Better Support Experience

CREATE IMMERSIVE EXPERIENCE WITH THE ADDITION OF SMART HOME CONTROL WITH QUICKSET

Blending experiences

Quickset offers:

- Provide curated list of devices for easy entry into Smart Home Lifestyle device popular devices like Lights, Plugs, Thermostats and many more
- Bring Interoperability and intelligent onboarding to blend Entertainment and IoT devices
- Support for existing and new devices within the home across varied protocols



Ensuring compatibility with what consumers already have in their home including existing entertainment devices, smart speakers and a wide range of IoT Smart devices.

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 •Smartthings lighting •... 	<ul style="list-style-type: none"> •Belkin Wemo •TP-Link •Leviton •Etekcitey •D-Link •Hive •IKEA •iHome •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 •...

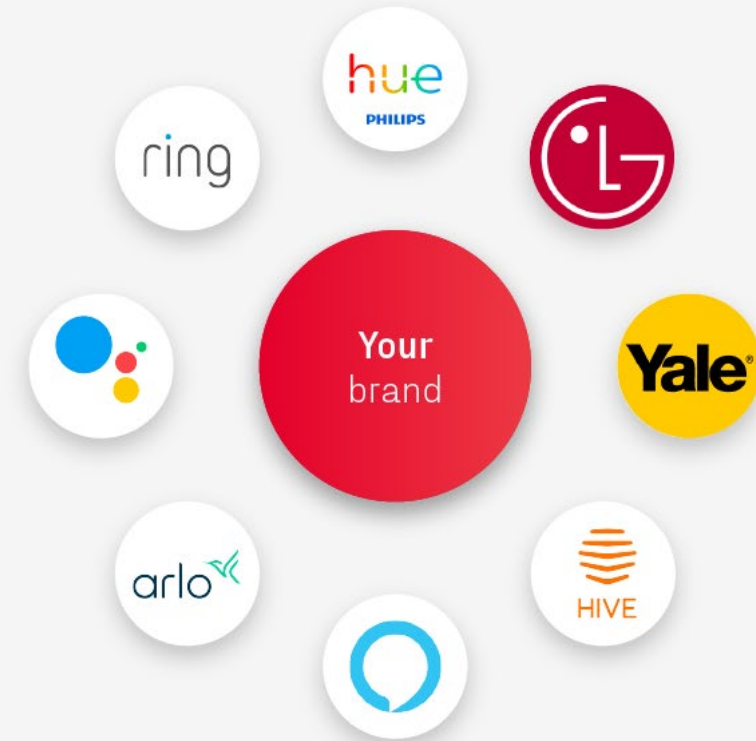


Provide curated list of devices for easy entry into Smart Home lifestyle device starting with Lights, Plugs, Thermostats...

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

Interoperability as a Service

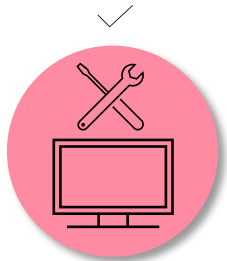
- Addresses consumers' needs as well as manufacturers' challenges
- Ensures the product is compatible with what consumers have in their home whether it be an existing hub, smart speaker or automation platform as well as those devices Powered by QuickSet



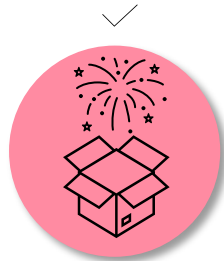
Interoperability as a Service



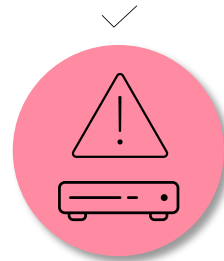
Self support service for



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

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

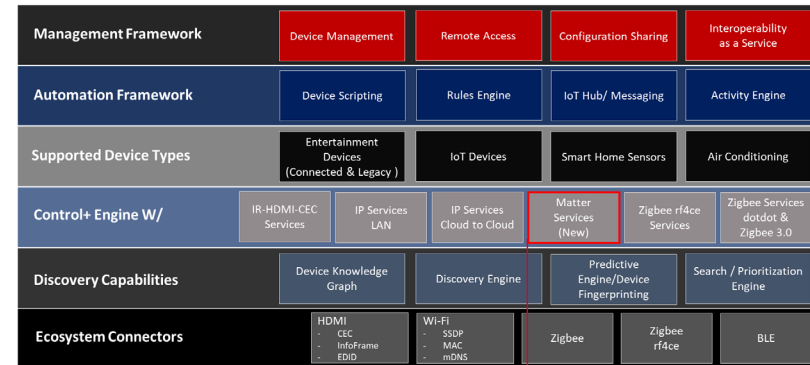
Upgrade Path

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

WITH THE PROMISE OF MATTER, WHY QUICKSET?

Enhanced Control

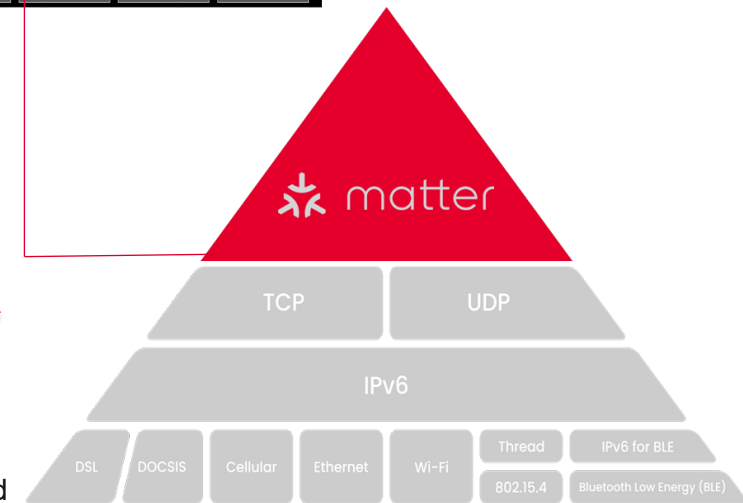
- A powerful and simple **single interface** for customers to merge and **expose** devices with varying **protocols & capabilities**.
- **Matter open stack, made simpler:**
 - Knowledge graph that understands device specific steps and APIs for onboarding of both devices as well as controllers
 - Continuous testing, updating and maintaining device knowledge graph to include new variations, and regions as an on-going dedicated effort
 - Device specific virtual agent to support on and off device troubleshooting and assistance
- Simplifies onboarding of devices through device specific onboarding and other offerings like Virtual Agent
- Simple and Unified API and device model to discover, onboard and control Matter enabled and legacy devices



QuickSet Framework



Matter Standard



Control+ Engine with Matter

Discover, onboard and control for Matter compatible devices. *QuickSet works as both a Controller and an Accessory to provide compatibility and interoperability with other existing or new Matter devices in the home.*

Thank you!

