

Getting to Know You: Secured IoT Onboarding

iotops WG Virtual Interim Meeting

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IoT Operations Challenges

- Device Onboarding
 - Verification
 - Credential establishment
 - Configuration
 - User-visible Naming
- Device Management and Maintenance
 - Monitoring
 - Configuration changes
 - Firmware/software updates
- Device Disposition
 - Resale, gifting, destruction

Project Connected Home over IP (CHIP)

- Effort to create widely-supported IoT communications standards
 - Runs over any media that supports IP (Internet Protocol)
 - First priorities will be Wi-Fi, Thread, and BLE
 - Focus on Smart Home
- Working Group in Zigbee Alliance
 - More than 180 companies participating
 - Including many market leaders
 - Open to all Zigbee Promoter and Participant members
 - Intellectual Property contributed by many members
- For more info, see <https://www.connectedhomeip.com>

Why CHIP?

- Consumers want and need to make their homes smarter
 - Especially with recent trends to Work From Home and Remote Learning
 - But today's Smart Home is often too complex, insecure, and incompatible
- CHIP will deliver
 - Smoother and easier experience
 - For consumers (onboarding, control, monitoring, etc.)
 - For manufacturers
 - Universal interoperability
 - Products from all CHIP members should work together easily
 - Strong security
 - Pervasive & robust
 - Based on proven techniques

CHIP Onboarding

1 User brings new device to Smart Home



2 User scans QR code



3 User presses pairing button



4 Device is verified and provisioned



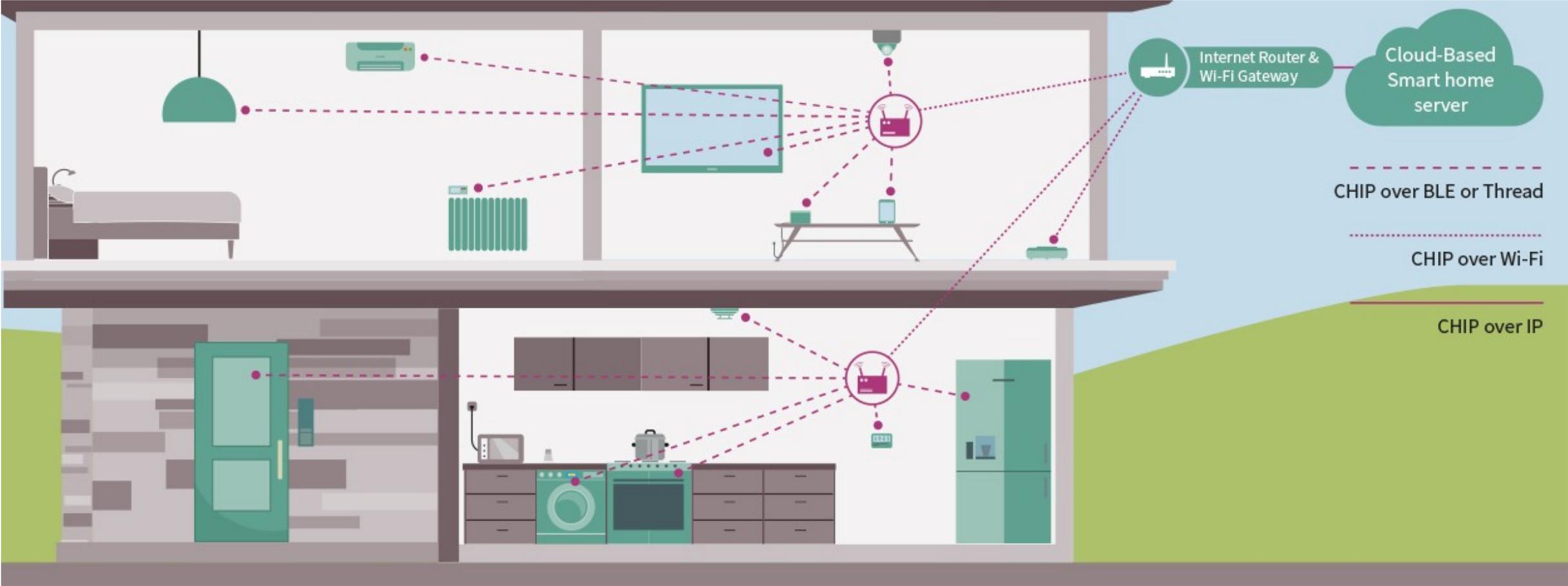
5 Device connects to secured home network



6 Device operates smoothly in Smart Home



Typical CHIP Network



What is CHIP?

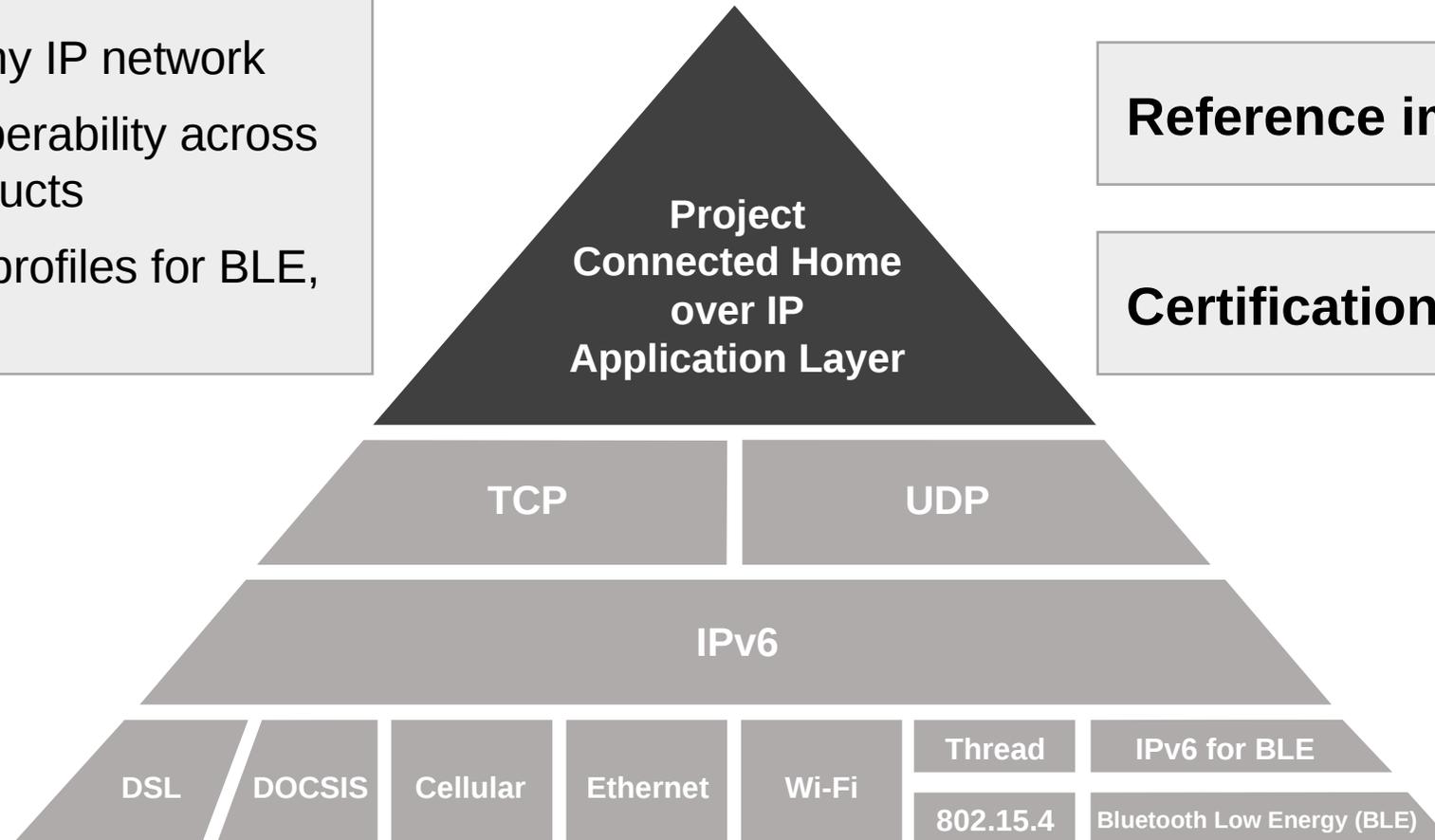
Standard communications protocols

- › Working over any IP network
- › Enabling interoperability across all certified products
- › Including initial profiles for BLE, Thread, & Wi-Fi

Easy onboarding process

Reference implementation

Certification program



CHIP reference implementation

Open source software library

Available to anyone, royalty free

**Implements CHIP
standards**

**Based on market-
tested technologies**

Flexible

- › Any Application
- › Any Hardware
- › Any OS

Addressing IoT Operations Challenges

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Possible Next Steps

- CHIP specs to be published soon
 - Products shipping by end of 2021
- Collaborations with other standards groups encouraged
 - Liaison Agreement with IETF
 - Formal collaboration
 - Joint Membership
 - Informal collaboration
 - Status Quo
 - Informational reports