the ultimate guide to Home Automation at CES 2016

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Look for the Yellow!
The Future of Smart Home Innovation

Panel Discussion
Friday, Jan. 8
11:30 am – 12:30 pm
LVCC North, Rm N253

Innovation is pushing the connected home in a multitude of directions, resulting in a mind-boggling array of "smart" systems, products, and apps. How many are true game changers and how will hardware and software companies work together to deliver interoperable products and create an open ecosystem? Smart home gems garnering the most consumer adoption will be revealed.

Moderator
Julie Jacobson, founding editor, CE Pro

Speakers
Arthur Orduna
Chief Innovation Officer, ADT

Brian Pope
CMO, Smart Things

Michael Pessina
Co-CEO and president, Lutron

Letha McLaren
CMO, Icontrol

READ & REGISTER
Preview of CES 2016 Smart Home Panel with Samsung, Lutron, ADT, Icontrol
Home Automation Themes

• Home automation hubs … and not-hubs
• Audio, video and spatial analytics
• Smarter lights, cameras, doorbells, door locks
• IoT Network Intelligence
  – Security, monitoring, access, device discovery
• HA standards, initiatives, and alliances
  – DECT ULE, ZigBee, Z-Wave, Thread, Weave, AllSeen, OIC, Enocean, BLE Mesh …
• Security monitoring: (DIY, MIY, Hybrid DIY/Pro, PAYG)
• Mobile IoT / M2M
Misc. Observations

• There sure are a lot of new IR products to control legacy devices
• Some cool technologies making dumb things smart
• IoT scent diffusion is now a “thing” (what are essential oils?)
• This year, I couldn’t even touch the health, wellness and aging-in-place categories, but they are certainly relevant to the smart home.
CES Venues

**TECH EAST**
LVCC, Westgate, Renaissance

**TECH WEST**
Sands Expo
Venetian, Palazzo

1.5 mile walk from LVCC to Sands
Paradise drive has fewer people
traffic, more direct route
**TECH EAST**

*LVCC, Westgate, Renaissance*

**North Hall (100 - 6700s)**
- Cars
- iProducts
  *Control4 / Livio / Ford*

**Central Hall (7200 – 15000s)**
- Big CE (Panasonic, Samsung, Sony)
- Big Tech (Qualcomm, Intel)
- TV service (Dish, TiVO)

**South Hall, Upper Level (30000 – 36000s)**
- Networking
- Gadgets
- Power

**South Hall, Ground Level (20000-27000s + Meeting Places-MP)**
- Z-Wave pavilion
- Drones
- Gaming
- VR & AR
- Cyber security
*Powerhouse Alliance*
Tech West
Sands Expo/The Venetian, The Palazzo, Wynn Las Vegas and Encore at Wynn

TECH WEST
- Sands Expo
- Venetian meeting rooms
- Venetian/Palazzo suites
- Wynn

Venetian/Palazzo Suites (VP)
- Custom-installed solutions
- High-Performance A/V
*Not “right next door” to Sands

Venetian Level 1, 2, 3, 4, 5 Meeting Rooms
1000s 2000s, 3000s, 4000s, 5000s
*Adjacent to Sands

Sands Level 2, Halls A-C
70000-75000s
- Smart Home
- Fitness & tech
- Health & Wellness
- Kids & family
- 3D Printing
- Robotics
- Wearables

Sands Level 1, Hall G 80000 – 83000s
- Eureka Park
- Innovation Awards
STANDARDS, ALLIANCES, FRAMEWORKS

• TECH WEST – Sands, Venetian
  – Venetian/Palazzo Suites (VP)
  – Sands Level 2, Halls A-C (incl. Smart Home Marketplace) (70000-75000s)
  – Sands Level 1, Hall G + Meeting Rms (80000 – 83000s)
  – Venetian Level 1, 2, 3, 4, 5 Meeting Rooms 1000s, (2000s, 3000s, 4000s, 5000s)
  – Venetian Palazzo Suites (Levels 29, 30, 31, 34, 35 – check at show)

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HA ‘Standards’ & Frameworks

- **ZigBee** #71344
- **Z-Wave** #2100, 70426
- **Insteon** #70723
- **Enocean** #70329
- **DECT ULE** #70527
- **Nest Weave** (Thread - #70560)
- Proprietary
- Semi-proprietary
  - e.g., Lutron ClearConnect
- Pro security sensors
  - e.g. 433 MHz
- **Bluetooth**, BLE, Mesh

- **Wi-Fi, 6LoWPAN**
- **Thread Group** #70560
- **Open Internet Consortium** VP
  - Samsung, Intel …
- **Alljoyn/AllSeen** #71836
  - Qualcomm, LG, Panasonic, Cisco …
- **Apple HomeKit**
- **IFTTT**

**READ:** Can Wi-Fi or Bluetooth Supplant ZigBee or Z-Wave for Home Automation?
Bluetooth (BLE) Mesh

• Bluetooth Smart Mesh networking
  – Faster speeds, longer range announced

• Exhibitors
  – Jasco #9005
    • Avi-on lighting ecosystem
    • Also a leader in Z-Wave & ZigBee w/ GE-branded lighting and appliance controls. ZigBee brand is EZ ZigBee.
  – Ilumi #71334
    • Smart bulbs (next slide)
  – Gooee #70342
    • IoT platform for lighting
  – CEL #70957
    • 802.15.4: ZigBee, Thread, and Bluetooth
  – Nodon + Silvair #70544
    • Bluetooth ecosystem
Ilumi Smart Bulbs

• Proprietary MeshTek platform
  – “First and only” demonstrated Bluetooth Smart mesh that supports both broadcast and connection-based
  – 150 feet potential range resulting in a combination of speed, reliability and simplicity.
  – Control more than 50 ilumi Smartbulbs

• NEW MeshTek Bluetooth Modules for third-party manufacturers and developers
  – Integrated “advanced connection” and broadcast mesh stack
  – Powered devices (wall switches, smoke alarms, etc.)
  – Low-power option for battery-powered applications (sensors, remotes, wearables)
- BeeWi BLE Ecosystem
  - BLE/Wi-Fi gateway
  - LED bulbs
  - Plug-in appliance modules
  - Sensors
  - NEW Aroma diffuser (slide below)
Z-Wave Alliance

- **Z-Wave Alliance**
  - Booths
    - #21000 – South Hall lower level (listed under Wistron)
    - #70426 – Sands, Smart Home marketplace
  - New leader: Mitchell Klein
  - New Dealer training and certification program announced
  - New **S2 IoT security framework**
    - “HomeKit-Level Security Algorithm”
  - New Z-Wave products at Thread booth
Z-Wave Alliance Partners

- **BeON Home**
  - Modular smart bulbs - more info below

- **Fibaro**
  - Swipe, video doorbell

- **NEEO**
  - Remote

- **Philio**
  - Multisensors
  - **NEW** Smart color button (dimmer, push-button, color wheel)
  - Z-Wave IP Gateway, Z-Wave USB dongle
  - Smart home controller and app

- **MiOS**
  - Vera, no monthly fees
  - **NEW** Security pay-as-you-go plans

- **Worthington Distribution**
  - Go-to guys for Z-Wave integration

- **Yale Real Living**
  - **NEW** Look Door Viewer Doorbell Cam
  - **NEW** Linus lock with Nest Weave

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**STANDARDS**

- Fibaro video doorbell intercom
- Yale Look doorbell cam with automation
Z-Wave Alliance

- **Vision**
  - Sensors, Z-Wave devices

- **Nexia**
  - NEW Doorbell Sensor

- **MCO Home**

- **PlumChoice**
  - NEW ConnectedHome Expert service for smart-home tech support

- **Enerwave**

- **Oomi by Fantem**
  - Complete control system (see: hubs)

- **Aeon Labs, Aeotec**
  - Sensors, bulbs, doorbell, smart window film,

- **PolyControl, Danalock**
  - NEW Door lock now $149

- **Remotec**

- **SecureNet**
  - SHaaS (smart home as a service) with Resolution Products

- **Locks**
  - Kwikset, Schlage, Yale

- **Nortek Security & Control**
  - 2Gig, GoControl – complete home automation/security systems for pro and DIY installation, plus Z-Wave accessories

NEW
Nortek’s 2Gig GC3 launches this year
ZigBee Alliance #71344

- ZigBee 3.0 ratified
  - All flavors in one
- **NEW ZigBee + EnOcean collaboration**
  - Self-powered @ 2.4 GHz
  - Will combine EnOcean Equipment Profiles (EEPs) with ZigBee 3.0
- **Participants at booth**
  - Atmel
  - Centralite
  - DSW
  - Feibit
  - Legrand
  - MMB Networks
  - NXP
  - OSRAM (Sylvania) – Lightify gateway & ecosystem
  - OWON - thermostats
  - Philips Hue
  - POMCube – Residential energy storage
  - Ubisys
  - XHY Intelligence Tech.

CES 2015 – Enocean + ZigBee
Philips Hue Tap, Legrand switches
• **About CEL**
  - Develops ZigBee, Thread, BLE, and Wi-Fi end-to-end solutions
  - Showing at CES: white label bridge/hub, fob, USB sticks, ZigBee/Thread/BLE/WiFi modules, sensor nodes
  - Announcing new Cortet platform at CES

• **Partners in CEL booth, mostly ZigBee:**
  - Logitech (Harmony Hub Extender)
  - GE (Light Switches, Lamp/Appliance Modules)
  - **CentraLite** (Water Sensor, Door/Window Sensor, Temp/Humidity Sensor, Motion Sensor, Thermostat, Appliance Module, SmartSwitch)
  - **Keen Home** (Smart Vent)
  - **Qmotion** (Shades)
  - **Leviton** (Switches)
  - Briggs & Stratton (Bridge/Hub)
  - **Scout Alarm** (Door/Window Sensor, Motion Detector)
  - **Fidure** (Thermostat)
  - **FortrezZ** (Water Sensor, Valve)
  - **Waxman** (Water Sensor, Valve)
  - **Oso** (Moisture Sensor, Hub)
  - **Axis Blinds** (Motorized Shades)
  - **Roof Guard** (Smart roof protection system)

**NEW SLIDE 1/3**

**CEPro**

**CEL** Partners at CES  #70957

**Fidure** no-frills ZigBee thermostat ($59), powered by CEL

**Waxman** LeakSmart leak detection and shut-off valve

**Axis Gear** motorizes existing window shades

**PlantLink** from Oso matches your plant with a database to maintain ideal moisture conditions.

New Slide 1/3
Thread Group #70560

- **Thread Group**
  - Initiated by Nest, Thread is a network-layer protocol that defines security, power management and mesh networking. At CES, the group will show many disparate devices sharing a single mesh network, although not necessarily communicating across all clusters.
  - **Important to note** that all devices in a Thread ecosystem help extend the communications range via shared mesh, even if they are not using the same application and can’t communicate with each other per se.
  - Thread demo at CES utilizes app-layer protocols developed specifically for the demo.

- **Cluster 1**
  - Nest
  - Big Ass Fans (Haiku)
  - Amatis Controls (AMBR 6LoWPAN router)

- **Cluster 2**
  - Resolution Products – HA hub/security
  - Nortek – GoControl garage door controller
  - Yale
  - Kwikset
  - Tyco
  - NEW P&G (Febreeze IoT fragrance dispenser)

NEW AT CES:
- CentraLite adopts Thread
- GreenPeak Makes integrated ZigBee/Thread SoC
- ZigBee Collaborates with Thread on end-to-end solution to become part of ZigBee’s product development specs, technologies, branding, certification
GreenPeak ZigBee/Thread

- **NEW** GP712 Smart Home radio chip
  - Combines ZigBee PRO, ZigBee RF4CE and Thread in a single component
  - Supports up to three protocols concurrently
  - “First radio communication controller to support ZigBee and Thread in a single device with fully independent channel selection – at the cost of a single protocol solution”
  - Simultaneous listening on different channels for both ZigBee and Thread packets using a single radio
  - “Major cost reduction”
  - Thread-certified software stack and development kit is expected mid-2016.
CentraLite #70731, 70560 (Thread), 3709 (SiLabs)

- CentraLite Adopts Thread
  - CentraLite has been a powerhouse in ZigBee, providing devices for a vast number of major home automation product and service providers
  - New Thread-enabled devices powered by Silicon Labs Toscano 3709
    - 3-Series Lamp Module
    - Motion Sensor and Door Sensor
Enocean

- **Enocean** #70329
  - Energy harvesting, battery-less technology
    - Kinetic energy
    - Ambient light
    - Ambient movements, e.g., temperature swings
  - EnOcean > 1,500 interoperable products
- Multiple frequencies
  - 315 MHz
  - 868 MHz for Europe
  - 902 MHz for N.A.

**CES 2016**
- **Enocean** #70329
- **Zipato** – home automation integration #71055
- **NodOn** (IR-DF) – switches #70544
- **Ubiqant** – Hemis energy management #71060

Water sensor from Afriso activates when liquid expands the sponge.

NodON switches powered by kinetic energy.
NEW Wi-Fi HaLow – low-rate, low-power protocol for IoT

For battery-operated sensors, wearables, parking meters etc.

“Wi-Fi's answer to Bluetooth”

900 MHz

2x range of Wi-Fi, improved penetration through walls and other obstacles

More info to come …
• **Affinegy**  
  – CHARIOT, first cloud native experience for AllJoyn product or service

• **Argenox Technologies**  
  – Wireless connectivity for AllJoyn stack

• **Buffalo**  
  – Gateway devices

• **Beechwoods Software**  
  – AllSeen Lighting over Thread; Raspberry PI running RDK while simultaneously hosting AllJoyn services

• **Beijing HengShengDongYang**  
  – SmartConn AllJoyn Web services; ‘SIP End2End Connector’ under Gateway Working Group of AllSeen Alliance

• **Cloud of Things**  
  – IoT Application Enablement Platform (AEP)

• **FreeWings**  
  – Smart gateway, sensors, smart lighting, sockets

• **Heaven Fresh**  
  – Air purifier and humidifier available 2016. Works with Amazon Echo and AWS IoT.

• **Initial State**  
  – Data analytics & data management

• **Kii**  
  – Backend platform; 140M+ end users

• **Legrand**  
  – New Eliot IoT program launched in 2015

• **PowerTech**  
  – power management devices

• **QEO (Technicolor)**  
  – TV integration, founding member

• **Qualcomm**

• **Two Bulls**  
  – Higgns ecosystem developer

• **ULE Alliance**

• **y8studio**: Prefab Passive House
AllSeen Certified Products

- LG Smart TV #8204
- LG Smart AC WLAN Module – for select LG air conditioners
- Microsoft Windows 10 Pro, Surface Pro 3
- Musaic MP5, MP10, MPL #81127
  - Music streamers with LightWave RF lighting control
- Buffalo AirStation 1900 - router
- Higgins – IoT ecosystem from Twobulls
- Gramofon – WiFi music streamer with AllPlay
- LIFX – LCM smart bulbs

AllSeen concerns communications, security and interoperability ONLY at the local premises, not into the cloud.

Last year, there was only one cloud-enabler for AllSeen: Muzzley (#71560).

This year there are several.

Note LG’s new SmartThinQ hub (below) is touted as AllJoyn/AllSeen compliant.
• NEW **Legrand Eliot**: Electricity + IoT
• End-to-end framework
• Launched Sept. 2015
• AllSeen, ZigBee
• NFC for install, maintenance
• Who knew?!
• IoT Framework
• Key backers:
  – Founded by Samsung, Intel, Broadcom in 2014
  – Broadcom bails in 2014, presumably because of IP concerns
  – Cisco dives in
• NEW Acquired UPnP Assets, Nov. 2015 🎉
**ULE Alliance – DECT ULE #70527**

- **DECT ULE**
  - Takes advantage of millions of DECT multi-handset phone systems in the market with low-power ULE HA platform.
  - Touts longer range, lower power consumption, robust and secure RF channels
  - Supports two-way voice, audio and video communications
  - “Requires fewer nodes” compared with other mesh technologies

- **Cordless phone makers**
  - Panasonic Smart Home
  - Vtech
  - Gigaset

- **Crow Electronics**
- **ROC-Connect**
- **DSP Group** (next slide)
DSP Group – DECT ULE #70527

• Wireless Chipset Provider, including DECT ULE
  – Panasonic, Vtech - Complete smart home system (UI, cloud platform, smart home hub, smart devices)
  – Interoperability and integration: ULE + AllSeen, ULE + OIC

New Turkcell Home Automation Service
  – Turkish telecom provider with 68 million subscribers
  – Launching ULE-powered IoT services using DSP SoCs
  – DECT already embedded in 3 generations of Turkcell home gateways, so “a simple software upgrade to ULE for IoT support was a natural step.”
  – No new gateway required

• “Voice of IoT”
  – Voice-enabled smart home – voice commands, voice announcement, two way voice, etc.
  – Smoke Detector with interactive voice/audio
  – Battery powered video camera with interactive voice/audio
HOME AUTOMATION HUBS

• **TECH WEST – Sands, Venetian**
  – Venetian/Palazzo Suites (VP)
  – Sands Level 2, Halls A-C (incl. Smart Home Marketplace) (70000-75000s)
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Home Automation Hubs

• “Home Automation hubs” used to be the rage
  – SmartThings - $200 million acquisition

• Yet no big success stories for DIY “hubs”
  – Not an impulse buy
  – Where do you put them on shelves?
  – Who at the store can sell/support? Remote tech support is onerous.
  – Lots of returns
  – Revolv, Lowe’s Iris, Staples Connect, Wink …

• Today: home automation hubs masquerading as other devices
  – Routers (Securifi is back with Almond + smart router … now works with Nest)
  – Cameras – Like Icontrol’s Piper, one of the first camera with HA hub built in
  – Touchscreens, video intercoms, light switches, e.g., Lucis and Nucleus
  – Amazon Echo – not yet, but you can imagine!

• Movement away from hubs?
  – All cloud, all the time? Works with …
  – Ubiquitous protocols: Bluetooth Mesh (soon), Wi-Fi, 6LowPAN (IPv6 over 802.15.4)

• Not so fast
  – ZigBee, Z-Wave, Enocean, DECT ULE, proprietary, pro security sensors, 433 MHz, Lutron ClearConnect, Insteon – not going away soon
Lowe’s Iris #70727

- **Next-gen hub 3.0**
- **New** Halo Smoke Alarm – works with Iris
  - ZigBee, Wi-Fi, Tornado alerts, night light (smoke & co)
  - Color indicators – speeds up if CO levels increase, e.g.,
  - photoelectric, ionization, CO, heat, and humidity.

- **Protocols & Frameworks**
  - ZigBee, Z-Wave, Wi-Fi
  - **New** AllSeen/AllJoyn

- **New** Made by Centralite

- **New** Went to own cloud service on Microsoft Azure
• This is not a joke
• Multiroom speaker
  – omnidirectional 360° sound
• Modular
  – RF connectivity
  – Cameras
  – perfume diffuser
  – atmospheric lighting
  – sound amplifier
  – pico-projector
  – “and many more…”

“Music, atmospheric lighting, safety, e-health, energy efficiency, home automation … Everything is linked to the user from everywhere.”
• *This is not a joke either*
• **Blaze B.One** Hub
  – Doubles as Qi Charger
• Does EVERYTHING
  – Literally
• Kinda like …
Remembering Revolv ...
More HA Hubs

- **Oomi by Fantem #70949, #80031**
  - Spinoff of Z-Wave developer Aeon
  - At CES: First time Oomi ecosystem demo’d with 7” touch screen controller, Oomi Cube, Oomi Dock, charger which can also trigger scenes, 14 other accessories
  - NFC for pairing

- **Revogi #36177**
  - BLE and Wi-Fi bulbs with audio
  - **New** Home Genie hub debuts at CES
  - Full array of sensors including sound detector
  - Project Zeus – WiFi plug for control and energy monitoring
• How the pros do it: Modular hub with snap-together modules
  – ZigBee, Z-Wave, Enocean, KNX
  – Cellular back-up
  – Back-up power
  – Professional security
  – More

READ: Zipato’s Modular Home Automation System: The Best Smart Home Platform?
New from Zipato #71055

- ZipaTile touchscreen controller
  - Temperature sensor
  - Alarm siren
  - 6 scene buttons
  - Back-up battery
  - Gesture (touch) controls
  - Microphone
  - Motion sensor
  - Humidity sensor
  - Speaker
  - IP camera
  - Shock sensor
  - Noise sensor
  - Dual dry contact
  - Dry input
  - Light sensor
  - Video

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Universal Remotes + Automation

- **Universal Electronics Inc.** (UEI) #20612
  - NEW Ecolink acquisition, 2015
  - Pro security sensors, including flood detectors
  - Z-Wave
  - Plans to create smart-home ecosystem for cable/Internet service providers, especially Tier 2.

- **Savant** #71337
  - NEW Savant Remote - $499 (next slide)

- **Universal Remote Control** (URC) VP
  - Total Control

- **Pronto Peel** (Omni Remotes) # 22010
  - BLE and 360-degree IR

- **Logitech Harmony** Harmony @ VP; Logitech, Veronese rooms
  - Harmony Elite with Z-Wave, ZigBee add-ons

- **Neeo** VP 31-321
  - NEW A big crowd-funding success
• **Savant Remote** ($499) – first DIY product for Pro-centric Savant Promises richer UX than Harmony

• Easy IR device discovery/enrollment process

• Communicates via IP with Sonos, Nest out of the gate
  – More IP integration coming

• Voice control via the remote

• Bluetooth only out of the remote

• Personalized by user

• User can capture and set scenes from remote itself

• Learning features, for example, most-used channels float to the top of individual users’ lists

• Savant part-owned by KKR, which part-owns Sonos
  – So expect especially good Sonos integration
Neeo Venetian 31-321

- **New Neeo** – Major crowdfunding success
- Wifi, Bluetooth, Z-Wave
- External 360° IR blaster
- Sonos, Nest, apple TV, Roku 3, more
- Remote: Wi-Fi (802.11b/g/n)
  - IEEE 802.15.4 dual antenna (6LowPAN and ready for Thread, ZigBee)
  - Accelerometer
  - NEEO Palm Sensor (BETA), patent pending
  - Capacitive sensors
  - Charging connector (gold plated)
  - Wi-Fi (802.11 b, g, or n) wireless network (to operate device wirelessly)
Logitech Harmony  Venetian Palazzo

• Harmony Elite ($350)
  – Wi-Fi, Bluetooth

• Extender ($49)
  – Z-Wave, ZigBee
• **VeraPlus** **NEW** Home Controller with ZigBee - $150
  – First Vera with ZigBee
  – CentraLite, Nyce, Sylvania, Schneider Wiser, Philips Hue
  – Also Z-Wave, BLE, Wi-Fi
  – More wireless protocols, more memory, faster processor than VeraEdge
  – As with all Vera controllers, no monthly fees

• **MiOS platform, NEW Services**
  – Professional central monitoring - $19.95/month, no contracts
  – Advanced Camera Management (ACM)
    • Cyphre Black Tie encryption
    • Basic cloud storage (1GB) now included, no additional charge
    • Fee for more storage, including push notifications, hot zones
  – Avail. for all Vera products: VeraPlus, VeraEdge, VeraLite, Vera 3
SHaaS (Smart House as a Service)

- **Icontrol** #70753, VP
  - Icontrol One for independent dealers
  - Piper DIY camera/HA hub
  - Whole-home learning analytics?

- **Alarm.com** (Nasdaq: ALRM)
  - Speaking, not exhibiting

- **Zonoff** Westgate suite
  - Staples Connect
  - ADT DIY from LG?
  - NEW announcements at CES

- **ROC-Connect**
  - NEW Kevin Meagher from Lowe’s Iris
  - OZOM in Latin America
  - ROC-Master announced
  - CES: Venetian and ULE Alliance

- **SecureNet** #21000
  - Powers Resolution Products and new EcoNet DIY HomeAlert

- **Samsung SmartThings** #11906
  - NEW: Scout for professional monitoring
  - NEW Z-Wave, ZigBee TV dongle

- **MiOS** #21000
  - Drives Orange, Vera, URC, Elan, others

- **Greenwave Systems** Murano 3303

- **Many IoT-enabling platforms**
  - Arrayent, Ayla, etc.

- **Proprietary**
  - Honeywell Connect
  - Interlogix ZeroWire
  - Vivint

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Audio, Video, Spatial Analytics

• Today: Lots and lots of single-purpose sensors
  – Motion, door/window, glass-break, fire, CO, light, smoke, water leaks, temperature, humidity ..

• Coming: Eliminate multiple sensors, use smarter analytics

• Video analytics (computer vision or CV)
  – Basic motion sensing – disruption in light or pixels
  – Advanced commercial applications: counting people, following objects, tracking customers in a store, identifying faces, identifying gestures and emotions
  – CV standard: detecting fires before they set off traditional alarms, via color detection, temp. and other markers (try Bosch, #71517)
  – Thermal imaging – heat detection (next slide)
Video Analytics – Thermal Imaging

• **FLIR #36211**
  – Consumer cameras/modules with thermal imaging (i.e., heat detection, night vision)

• **Traditional applications**
  – Detecting body shapes, e.g., hostages inside a building

• **New applications – these scenarios could be captured with thermal imaging**
  – Leaky air duct
  – Drafty window
  – Baby’s fever
  – Water leak
  – Overheated stove
  – Electrical faults

• **NEW Integration with Manything and IFTTT**
  – Manything turns unused cellphones into “free” video cameras
  – Integrates with IFTTT for triggers
  – Now integrates with FLIR so: IF flame is detected through FLIR, then text homeowner and turn off HVAC fan

• **Manything #70553**

READ: Flir One Thermal Imaging + IFTTT = Big Security and Home Automation Potential
Audio Analytics

- **Audio Analytics**
  - Relatively new phenomenon – picking up sounds in the environment, learning sound patterns, analyzing sounds such as crying and smoke alarms, or reacting to changes in sound signatures.

- **Audio Analytic, the tech developer**
  - Powers many of the “intelligent sound detection” products below and others, sensing glass break, smoke & CO alarms, car alarms, baby crying, gunshots, aggression, preprogrammed keyword such as “help” …

- **Smoke/CO Listeners**
  - [Centralite](#) #70731
  - [First Alert Onelink](#) #71831
  - [SwannOne](#) #7923
  - [Leeo](#) (not exhibiting?)
  - [Roost](#) #80535
  - [Belkin Wemo](#) #30445
  - [Kidde](#) #70358
  - [BeOn](#) #21000 (Z-Wave)

- **More listening & learning**
  - [Cocoon](#) – infrasonic sound detection (not exhibiting?)
  - [Listnr](#) (next slide)
Advanced Listening Tech

- **Listnr #36285, 74538 (Cerevo)**
  - Cloud-enabled listening device, “analyzes sound around Wi-Fi”
  - Voice recognition + “Analyzes feelings from the voice of the infant” - Developed with Panasonic
  - Sold to [Cerevo](#), voice-analysis engine developer, Jan. 2016
  - Sounds can be learned into device, such as snapping, coughing, doorbell …
  - [Youtube video](#)

- **Cypher with Harman offsite**
  - Cypher originally developed technology to isolate human voice from noise, especially for telephone communications
  - In learning the nuances of voice, Cypher also isolated background noises, accumulating a database of very specific sounds
  - These specific sound characteristics now can be used for other audio-analytic purposes, for example, warning a headphone-wearing jogger of a siren or barking dog.
Spatial Analytics

• Spatial Analytics
  – Analyzing disruptions in the physical environment -- without the use of video or audio capture -- to determine activities and behaviors
  – For example, disturbances in light waves, sound waves, radio waves …

• Apical Ltd. (private suite at Cosmopolitan)
  – “Like video analytics without video”
  – NEW ART platform for intelligent motion detection
  – Tend Smart Sensor - First announced Apical partner
  – Detects and recognize peoples with motion sensor, computer vision-powered human detection and facial ID technologies
  – Captures only metadata. Thereby protecting privacy of end consumers
  – Possibly showing at partner Kodak, offering new Tend baby monitoring system #20618

READ: Apical’s Secure, Smart Home Motion Sensors Work Like Video Analytics without Video
• Turns standard Wi-Fi network into a sensor network
• “Changing the way we perceive home security, baby monitoring, senior fall detection, fire rescue, and much more”
• Multiple Wi-Fi radios create a mesh, with noise and reflections that indicate what is happening in any particular environment. Aerial applies analytics to those disruptions to track movement and identify activities
• Identifies unique activity signatures for specific individuals based on their particular behavioral patterns
• Not unlike Apical
• Aerial Cube adds Wi-Fi nodes to mesh
• Developer kit, 2016
Sevenhugs Smart Remote #80637

- “World’s first contextual remote”
- Starts with 3 connected sockets, which detect position of controllable devices by triangulating signals.
- To configure, put remote next to device to be controlled.
- To control, point to the device to be controlled.
- Software knows which device it is and how it should be controlled, so appropriate UI appears.
- Current support: Philips Hue, Sonos, Nest
- Open platform
SMARTER LIGHTS, DOORBELLS, CAMERAS, LOCKS

• TECH WEST – Sands, Venetian
  – Venetian/Palazzo Suites (VP)
  – Sands Level 2, Halls A-C (incl. Smart Home Marketplace) (70000-75000s)
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  – Venetian Level 1, 2, 3, 4, 5 Meeting Rooms 1000s, (2000s, 000s, 4000s, 5000s)
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Smart Lights

- **BeON #21000 (Z-Wave)**
  - New Modular smart bulbs
  - Bluetooth Smart
  - Z-Wave
  - Audio analytics
  - Learning
  - Built-in battery

- **Sengled #70531**
  - New Sengled Voice (microphone/speaker)
    - voice control of devices
    - Voice communications
    - Audio analytics - glass breaking and baby crying
  - Snap (camera)
  - BOOST (Wi-Fi extender)
  - Pulse (multiroom audio)

**READ:** Sengled Puts Voice-Controlled Home Automation in a Smart Bulb
Smarter Lights

• **ComfyLight** #81652
  – Simulates presence, motion detection,
  – Flash when intruders detected

• **Nanoleaf** #70464
  – Smart, stylish LED, voice control
  – Hub for integration
  – Zigbee ha 1.2
  – HomeKit
  Voice control

• **Awox** #31514
  – Bulbs with integrated music
  – **NEW** SmartPEBBLE wireless light switch
    - hand gesture technology to control connected light
    - Shake to change from white light to color
    - Flip to put lighting into sleep mod
    - Turn to lighten or dim brightness of light.

• Soooo many more
Doorbell Cameras

- **Vivint** - Sky doorbell camera #71342
- **Yale Look** #21000
  - Peephole cam w/ Z-Wave or ZigBee, Wi-Fi
- **Brinno** peephole cams #22007
- **Echostar Sage** (sort of) #8143
- **Fibaro** - Intercom doorbell cam #70557
- **Ring** #72131
  - New integration with Kevo, Lockstate
  - New Indoor Ring Chime module
- **Bird Home Automation** – Doorbird #81927
- **Fenotek Hi)** #81140
- **August** – new doorbell cam VP
- **Zmodo Greet** (next slide) #71357
- **Skybell** not exhibiting?
Zmodo Greet  #71357

- Uses Existing doorbell wire
- Pre-record voice message on doorbell
- Camera: 4x digital zoom, 105 degree view
- IR lighting
- Wi-Fi
- IP51 outdoor rating
- Smart motion detect
- 2-way audio, internal mic
- 8gb storage
- 30 second video record, snapshot
• **Glue** #70332
• **Danalock** (PolyControl) #21000
  – NEW $149 price
  – NEW BLE Danapad
• **Lockitron** (Apigy) #80932
  – NEW again - back in crowdfunding with Bolt
  – NEW – abandons Wi-Fi locks for BLE
• **Yale** #21000 Z-Wave, #70560 Thread
  – NEW Linus Lock with Nest Weave
• **Kwikset** #70523
• **August** - door lock + N’EW doorbell cam VP
• **LockState** #71157
  – Last of the Wi-Fi locks?
• **Schlage** (Allegion) #71525 (iDevices)
  – New BLE Locks: Sense Deadbolt, Schlage Control for multi-unit
• **M2M Key Corp** #71057
  – Really M2M? Not sure …
• **SecuRAM** #71353
  – NEW Genesis Touch biometric lock
  – Home automation connectivity, but how?
  – “Finger vein ID” technology

“M2M cellular” door locks – not too sure if it’s really M2M cellular or just standard network
Smarter Cameras

• **iSmart Alarm** – Spot #71150
  – “Coolest HD smart home camera EVER”
  – Time Lapse
  – Smoke alarm listener
  – Kickstarter special - $50

• **Kuna** light fixture + cam #73172

• **Kodak Tend** (w/ AV analytics) #20618

• **Netatmo** Welcome (facial recognition) #73900

• **Withings** Home (facial recognition) #3802

From top left: Netatmo Welcome, iSmartHome Spot, Kuna, Withings Home
Smarter Cameras

- **IC Real Tech - ALLie Home** #11647
  - 360 x 360 dual lens
  - Immerse app + VR
  - Wi-Fi (ac), USB, Bluetooth BLE
  - Internal memory (1 hour)
  - Cloud service
  - Snapdragon processor
  - Voice recognition, motion detection, facial recognition
  - $599

- **SensorSphere - Orbii** #81247
  - Wi-Fi Connected robotic ball
  - HD Camera, Speaker, Microphone
  - Environmental sensors
Smarter Cameras

• **NEW Zmodo Pivot** #71357
  - 360 degree rotation
  - 2-way audio – Bluetooth speaker
  - Record – 16gb memory
  - Pans when motion detected
  - Temp, humidity sensors
  - Wi-fi
  - Micro usb
  - Integrates with door/window sensors and lighting
  - Coming: cloud and facial recognition

• **Branto** #80933
  - 360-degree HD camera
  - Motion sensors
  - Battery-powered
  - Cellular communications
  - Microphone with audio analytics
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IoT Security, Device Discovery

• Well-publicized smart-home hacks are killin’ us.
• The industry has responded from the very lowest levels – IoT protocols and frameworks – to the very highest, with the end devices.
• **NEW** Manufacturers are coming out with DIY products that sit on the network and read activity, searching for anomalies.
• Soon, these products will have the intelligence to *discover* devices on the networks, either through traditional broadcasting (Bluetooth, Z-Wave, UPnP, etc.) or from clever analytics:
  – IP communications signature
  – Chatter on the powerline (e.g., Smappee, Ecoisme)
• And then, individual boxes will take care of house-wide network security, including IoT devices … AND they will become a vehicle for sniffing the home for smart devices, learning their behaviors and triggering events.
IoT Security, Device Discovery

• **BitCircle** – BitBox (80632)
  – ‘The first home based personal cloud system”
  – Privacy and security of user’s personal digital information
  – Combines data from every sensor, secures it, gives control to owner
  – Users can share with family members, insurance companies, service providers, healthcare providers, financial institutions, etc.

• **Cujo** (80531)
  – Protects connected devices against malicious attacks.
  – Applies machine learning and behavioral analysis to bring peace of mind to your home.

• Not exhibiting
  – **Dojo Labs**
  – **Luma**
  – **Krika**
IoT Security

• **Daplie - Cloud** #80461
  – Encrypted, private, secure, and social cloud for the home.
  – Cloud retains encrypted data and access privileges to connected devices and puts the owner in full control.

• **PFP** #80246
  – IoT cybersecurity solutions detect cyber-attacks in IoT hardware and software.
  – Detects tiny anomalies in power patterns to catch attacks early.
  – Allows external device to monitor internal execution status of a processor and identify any deviations from authorized execution.
  – Can be implemented in a single-chip IoT solution.
Domotz #80631

- Monitoring app for IP/Wi-Fi devices including IP cameras, NAS, routers, media players (like Ihiji or OvrC for DIY)
  - Auto-discovery, port detection, secure connection, remote reboot
  - Monitor, power, access, troubleshoot, diagnose
  - Battery levels, bulb-life, signals and jitter quality, number of neighboring repeaters, packet error rate, signal degradation
  - Sonos diagnostics, other brands coming.
- Domotz Agent runs on NAS, Pi or Domotz Box
- Z-Wave support coming, later ZigBee
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Security: DIY, MIY, PAYG

- Security trends
  - Do it yourself install (DIY)
  - Monitor it yourself (MIY)
  - Hybrid DIY/MIY + Pro
  - Pay-as-you-go monitoring, no contracts

- CES
  - MiOS (Vera) #21000
  - iSmartAlarm #71150
  - SwannOne #7923
    - ZigBee, Z-Wave, SmartThings
  - Echostar Sage #8143
    - New Calls local police department
  - SmartThings + Scout Monitoring New
  - Lowe's Iris – New pro monitoring
  - ADT – New LG device #71825
  - Vivint #71342
  - Nortek – 2Gig #70936
  - Honeywell – Lyric #70931
  - Essence Group #70958

SwannOne with professional monitoring, pay as you go

Echostar Sage with connections to local police departments (PSAPs)

READ: DIY vs Pro Monitored Home Security: How Law Enforcement Responds to 911 Calls
• Z-Wave-enabled security and home automation with professional monitoring available
• NEW UFO WiFi Panoramic Camera
• NEW K1 Smart Home DIY Kit
• IFTTT
United Technologies (UTC)  #70358

- **UTC Home Tech Ecosystem**
  - Last year UTC hinted at a DIY security and control system that could be professionally monitored through Interlogix’s new, inexpensive self-contained ZeroWire security system and Interlogix’s own cloud service. This year, more products have been added the ecosystem

- **Interlogix**
  - ZeroWire security system

- **Kidde RemoteLync**
  - RemoteLync smoke/CO listener
  - NEW RemoteLync camera

- **Carrier**
  - Cor smart thermostat
  - NEW Côr home automation hub “marks the next step in Carrier’s evolution as it provides homeowners the ability to remotely connect to the most crucial aspects of their home: the lights, the locks, cameras, and, of course, their thermostat.”
Echostar Sage #8143

• **New** Calls local responders, wherever you are
  – Uses home address to know if home or not.
  – Maintains own server specifically for maintaining current local phone numbers for emergency services.

• **Pay as you go plans available**

**READ:** [EchoStar Sage OTT Home Automation Looks Super-Impressive](#)
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Making Dumb Things Smart

- Doorbell sensor (Echostar, Nexia)
  - Installs between doorbell and chime, listening for signals that bell has been pushed
- ShutterEaze (shutters) #81542
- Meld
  - acquired By “large kitchenware co.” (at CES?)
- Lock mechanisms
  - Devices that sit on top of existing deadbolt levers
- Smart registers for dumb HVAC
  - Ecovent #71259
  - Keen Home #70647
- Listening devices, e.g. Kidde
- Microbot Push (next slide)
- Switchmate
  - Sits on top of light switch and toggles it
Microbot Push is a wireless robotic finger that can push most ordinary buttons just like a human finger does.”
More Dumb Things - Smart

- **Sesame by Candy House #80833**
  - Fits all dead bolts – attach on top of lever
  - Custom knock can open door
  - BLE with WiFi gateway module

- **Switchmate #80633**
  - Snaps right over switch, attaches with magnets and toggles
Sensibo #81255

- Makes IR air conditioners smart
- Hub + Pods
- Learns and adapts
- IFTTT
- Pod: 6LoWPAN for control, BLE for beacons
- Pod sensors
  - Temperature
  - Relative humidity
  - iBeacon presence
  - Piezo-electric disc (senses fan level of AC in room units)
  - Light (for activation of night mode)
  - 6 IR emitters
  - IR receiver (pass-through for existing remotes)
Dumb to Smart

- **Innomdle Lab** - TipTalk #81453
  - “Replace your watch strap with TipTalk then your watch will be smart.”

- **SideClick Remotes** #81150
  - Old-fashioned IR snap-on module to control TV on/off, volume and other common controls. Snaps onto common STB remotes.

- **Tado** #80948
  - IoT for IR-controlled air conditioners

- **Klikr**
  - IoT-enabled buttons for IR devices
  - Learning IR, BLE
MOBILE IoT

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Mobile IoT, or M2M

• Cell-enabled smart devices that connect to cloud services directly over open-air cellular networks – no Wi-Fi network connection required. Especially: new low-power cellular radios and networks. Most development in 2nd half 2015.

• Technologies & Lingo
  – LPWAN - Low-power wide area network
  – UNB – ultra-narrowband
  – GSMA launches mobile IoT initiative
  – LoRa Alliance, LoRaLAN - a popular LPWAN specification
  – Nokia, Ericsson, Intel collaborating on Narrowband-LTE (NB-LTE)
  – Huawei and others support competitive Narrowband Cellular IoT (CIoT)
Mobile IoT

• **Panasonic Nubo** #9808
  – 2G/3G/4G LTE with roaming
  – WiFi b/g/n, ZigBee, and Bluetooth
  – Shipping early 2016, $7-10/month basic

• Nortek – **Numera** acquisition #70936
  – mPERS (mobile personal emergency reporting system)

• **Sigma Designs** (owner of Z-Wave tech) Westgate Suites
  – NEW **Acquired Bretelon**, stealthy mobile IoT developer, for $22M
  – Owns Z-Wave technology
Mobile IoT Tech/Network Providers

- **Qowisio** #80844
  - French startup in 29 countries
  - Low-cost, low-power, ultra-narrowband cellular network for IoT
  - Raised €10M in June 2015
  - Launch first UNB/LoRa dual mode network.
  - Ultra Narrowband

- **Sigfox** #81224, Toscano 3710
  - Backed by Samsung, Intel, Telefonica
  - Operating in 12 countries
  - **NEW** Deploying in San Francisco
  - SIGFOX and TI **working together:** SIGFOX network with TI’s Sub-1 GHz RF transceivers for wireless sensor nodes that are lower cost, lower power than 3G/cellular connected nodes, while providing long-range connectivity to the IoT.

**READ:** [San Francisco Now Has Its Own Cellular Network Just For The 'Internet Of Things'](https://example.com)
BIG CE

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- **SmartThings**
  - **NEW** Scout professional monitoring
    - $20/month, no contract
    - Requires only SmartThings Hub and compatible sensors

- **Samsung**
  - All smart TVs to become SmartThings hubs, but requires ...
  - **NEW** Z-Wave/ZigBee **Extend** dongle for SmartTV
  - Co-founder of OIC ... any activity there? Also AllSeen member

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Not pregnant.
LG Electronics #8204

- **New SmartThinQ** home automation hub
  - Used to be just for major appliances
  - now complete home control system w/ new hub
  - Bluetooth, Z-Wave, ZigBee
  - AllJoyn/AllSeen
  - Works with Lowe’s Iris
  - 3.5-inch LCD display
  - Streams music
  - SmartThinQ sensors connect to dumb appliances to monitor “state” through vibration, temperature, and activity such as opening/closing the fridge door.

- **New WebOS 3.0 for SmartTVs**
  - Certified by UL for “compatibility with IoT devices” … HUH?!
  - Control smart appliances through TV

- **HomeChat**
  - Platform for communicating with LG smart major appliances
  - Works with Nest

- **AllSeen Partner**
  - Compatible major appliances such as Smart LightWave Oven and LG Smart Air Conditioner
• **Bosch** is a giant provider of video surveillance technology, residential and security alarm systems, major appliances and more.

• Existing **Home Connect** service is available for connecting major appliances for remote control and support

• **New** subsidiary **Robert Bosch Smart Home**
  – Zigbee
  – Bosch smart home controller
  – smart thermostat
  – Door/window sensors
**OTHER STUFF**

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Pro-Centric Exhibitors

- **Traditional Pro-Oriented Control**
  - Control4 – New integration with Livio (#4230) from Ford Motor - Renaissance
  - Savant – New $499 Savant Remote for DIY #71337
  - Leviton (HAI, Bitwise) #21000 (Z-Wave)
  - Lutron - New Lutron Connect Gateway for Radio Ra and Homewor克斯 QS, New ZigBee keypad #70960
  - Nortek (Elan, 2Gig) #70936
  - Universal Remote Control (URC Total Control)
  - Legrand (OnQ, Vantage) - New Intuity system for mainstream + New Eliot IoT ecosystem? #71125
  - Powerhouse Alliance (custom distributor with multiple lines of home automation) #20836

- **Security-centric**
  - Resolution Products (Helix) –at Z-Wave, Thread booth and #30-329
  - Tyco (DSC, Qolsys) #71557
  - Interlogix (UTC) - with Carrier, Kidde #70358
  - Nortek (2Gig) - also at Thread, Z-Wave
  - Honeywell - New Lyric system #70931

- **Service Providers**
  - ADT – Pulse system, new LG product

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**Next-Gen Home TV (NGHTV) - NGHTV**
SmartHome 3.0 is a full-scale demo home in the Smart Home marketplace at sands. It features elements from custom-centric brands:
- **URC** Total Control home automation & A/V
- **Lilin** video surveillance
- **Luxul** enterprise-grade networking
- **Dena Heos**
- **DynaQuip** water system #71318
Airbnb Host

- Airbnb Host Assist platform
  - Allows product/service integration with cloud-based hosting platform, so Airbnb can manage digital key exchanges, occupancy/vacancy settings and more

- First partners
  - August - door lock + NEW doorbell cam VP
  - Danalock - lock #21000 (Z-Wave)
  - Igloohome - platform for Airbnb-related smart home control, plus IglooSense environmental sensor
  - Kevo by Kwikset (lock) #70523
  - Keycafe - key management platform
  - Lockstate - Wi-Fi locks #71157
  - Miwa - locks
  - Nest
  - Yale Locks - #21000 (Z-Wave)

And Competitor HomeAway
- New Apple TV Hospitality app
- Allows homeowners (hosts) to provide onscreen user-manual experience for guests, matching experience guests receive at major hotels. onscreen quality that a guest can now receive when they check into a room at a major hotel.
- HomeAway video
• ‘Building blocks’ inserted on powerlines
• CES demo: Smart home control via gesture, facial expression, natural language recognition
• Connected Car and Smart Home integration
  – Tesla Model S demo via a video
• Working kitchen on display
Scent Diffusers

- **SensorWake** #80541
  - Alarm clock - Wake to scent of coffee, peaches, beach, mint or money

- **P&G Febreze IoT scent diffuser** #70560 (Thread Group)
  - Includes temperature and humidity sensor

- **Lumiere** #81750
  - “world’s first smart essential oil diffuser” with “plug-and-play capsules”
  - “Analyses your profile to perfectly match your schedule, mood and pains. Tell it how you feel, and it will do the rest!”

- **Aroma Therapeutics** - **AromaCare** #80941
  - “First Diffuser of essential oils connected”

- **Beewi** #31154
  - “First Connected Oil diffuser with temp, humidity, CO2 sensors”
  - Bluetooth
**NodOn** (Altyor Group) #70544

- **Nodon**
  - Z-Wave, Enocean, BLE Smart
  - Switches
  - Sensors
  - Generally useful technology

- **EYE smoke detector**
  - Chamberless smoke detection technology
  - Nearly flush to wall
More

• **Nucleus** #71147
  – video intercom + automation

• **Lucis – Nubryte** #71752
  – Wi-Fi touchscreen replaces light switches, controls lights, has on-board camera, sensors
  – **New** low-cost option for switch replacement, no touchscreen

• **Elgato** #71131
  – Eve – indoor and outdoor temp. and environmental sensors
  – New HomeKit sensors – door/window
  – BLE
  – iOS 9 – Bluetooth range extenders

• No **Sentri** this year?
More

- **Securifi Almond+ #70434**
  - Smart router finally shipping
  - ZigBee, Z-Wave
  - Works with Nest

- **OLEDCOMM LiFi #71453**
  - Wi-Fi over LED lights

- **Somabar #80143**
  - Robotic bartender

- **Ozmo by Grokinglab #74436**
  - Smart cup monitors liquid consumption … doh!

- **Wezzoo Oombrella #80643**
  - Connected umbrella collects weather data and sends realtime alerts.
More

• **Beam Labs** #81549
  – Projector + computer + LED light
  – Screws into Edison socket or plugs in outlet with included power supply
  – Bluetooth, Wi-Fi

• **MUV Interactive - Bird** #81159, Zeno 4708
  – “The tiny wearable for your finger that makes any space interactive interactive”

• **Beco** #81540
  – Battery-free beacons, powered by ambient light
  – “Hyper-location services”
Hot!

• **Ween** #80635
  – “world's first geodriven smart thermostat”

• **iDevices** #71525
  – HomeKit
  – Switches, plugs, thermostat – BLE, Wi-Fi

• **Nuheat Signature** #70653
  – Wi-Fi floor heating thermostat

• **Innohome** #73052
  – Heat detector, installs near stove, taps into AC power line
  – Learns usage – alarms for unusual activity, quick raises in temp
  – If no response, turns off stove
  – Listens for smoke and CO alarms, turns off stove
• Collects sunlight using a solar tracker.
• Transports sunlight to the luminaires using fiber optics
• 360° audio & video camera, robot and video projector
• “Project movies & images, listen to music, browse the web, make video calls, play video games and even redecorate your home.”
• Projector: Tilts up to 90° (from floor to ceiling), 1000 lumens, 20,000 hours of life, 6000:1 contrast, 720p, Short throw display
• Cameras
  – Panoramic 360 degrees at top
  – 3D camera for distance and movement – developer kit for house-mapping
• Wi-Fi, Bluetooth
• Sensors: ultrasounds, infrared, light, air quality, temperature, humidity, compass, accelerometer, gyroscope, mics
• 1 TB local storage
• **NEW** Komfy
  – Replaces light switch
  – Camera
  – Bluetooth, Wi-Fi
  – Sensors
    • sound, humidity, temp, power consumption
  – microSD card slot
  – Cloud service, IFTTT

• **Connected Home Line**
  – Wi-Fi sensors, siren, plugs, camera
• Energy-harvesting devices
• Uses power of motion
• Company aims to commercialize first product, a battery-less and wireless dimmer for consumers late 2016
• Then: smart watch (using fast, irregular body motion)
• Smart water meter (powered by mild fluid flow)
• Link a button press to functions on your mobile phone, e.g., take picture, ring phone, place a call.
Displ’ever #81557

- Super-thin touchscreen e-paper display powered by ambient light, no batteries ([youtube](https://www.youtube.com))
- Free Java applets available already
- Upload new applets via NFC
- Enocean, AllJoyn, BLE, Thread
- Partners
  - NanoSense
    - CO2, VOC, humidity, temperature, IAQ
    - Enocean, KNX, LonMark, ModBus
    - Enocean IP gateway powered by Xively
    - Enocean KNX gateway
  - Elelectron - KNX devices
  - IVV
  - Vity – High-end home automation
- Shipping July 2016, $299 ($249 through Indiegogo)
New **Cassia Networks** #70564

- Established in 2014 with team from Google, Tencent, Facebook
- **Smart Home Hub, router, fall detector**
  - Claims patent technology can extend Bluetooth transmission to 300m, through three walls
  - Can connect with up to 22 devices at the same time
Nest

• Nowhere and everywhere at CES – No booth
  – Thread Group
  – ‘Works with Nest’ partners
  – ‘Just like Nest’ but …
  – Nest Weave
    • Yale Linus lock

• Latest innovations
  – Thermostat
  – Nest Cam
  – Protect

• Pro Solutions

If your Nest Thermostat notices you’re away, it can tell Whirlpool to keep your clothes fresh and wrinkle-free. And if you're home, it can automatically switch to Quiet Mode.
Who Named That?

- **SmartyPans** (smart cooking pans) #80662
- **LoveHandle** (Phone grips) #81131
- **Go Commando** (marketing service) #81132
- **3 Legged Thing** (Tripods) #12045
- **Smart Me Up** #80738
  - Real-time face analysis
  - Powers Photomaton, Netatmo, Inovallee
And remember...

* ‘Spot should not ride a Roomba’
The Future of Smart Home Innovation

Panel Discussion
Friday, Jan. 8
11:30 am – 12:30 pm
LVCC North, Rm N253

Innovation is pushing the connected home in a multitude of directions, resulting in a mind-boggling array of "smart" systems, products, and apps. How many are true game changers and how will hardware and software companies work together to deliver interoperable products and create an open ecosystem? Smart home gems garnering the most consumer adoption will be revealed.

Moderator
Julie Jacobson, founding editor, CE Pro

Speakers
Arthur Orduna
Chief Innovation Officer, ADT

Brian Pope
CMO, Smart Things

Michael Pessina
Co-CEO and president, Lutron

Letha McLaren
CMO, Icontrol

READ & REGISTER
Preview of CES 2016 Smart Home Panel with Samsung, Lutron, ADT, Icontrol
See you in Vegas!

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