

# AT19-WEB11-LB Accessing Your World: What's New in Environmental Control Technologies

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# Agenda

ATiA 2019

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What's New in Environmental Control  
Technologies

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Introduction



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Smart Speakers/Digital Assistants



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Other Means of Access



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Smart Home Devices



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Wrap Up

# Introduction

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# Learning Objectives

- Identify the differences between various environmental control technologies including the Amazon Echo, Google Home, and Apple HomePod
- Create custom voice commands for controlling the environment
- Identify areas of the home that can benefit from environmental control technologies

# Speaker Disclosures

**Benjamin Jacobs** has no Financial or Non-Financial Relationships to disclose.

# About Me



- **Ben Jacobs, Accommodations Specialist**
- Ben Jacobs is a retired Staff Sgt. serving 10 years in the United States Air Force. During his time in the USAF he provided information technology support and network security at Langley Air Force Base in Virginia, Osan Air Base Republic of South Korea, and Peterson Air Force Base in Colorado. Focused on Special Projects at Tools for Life, Ben brings his knowledge and drive for technological advancement to the team. His experience with network management, Android OS and devices, along with subject expertise on the Internet of Things (IoT), drives his passion for enhancing independence for people of all ages and abilities. His focus on universal design and mainstream technologies that can be leveraged by people with disabilities provides a unique perspective on the use of assistive technology for everyday living. An avid gamer himself, Ben advocates for education on the importance of gaming and its effect on social connectedness. Ben is originally from Maine and currently resides in Alpharetta, GA with his wife, his Xbox, and PlayStation.
- If you would like to connect with Ben directly, please send an email to: [ben.jacobs@gatfl.gatech.edu](mailto:ben.jacobs@gatfl.gatech.edu).

# Smart Speakers/Digital Assistants

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# What's the Difference?

- Smart Speakers are the car
- Digital Assistants are the driver





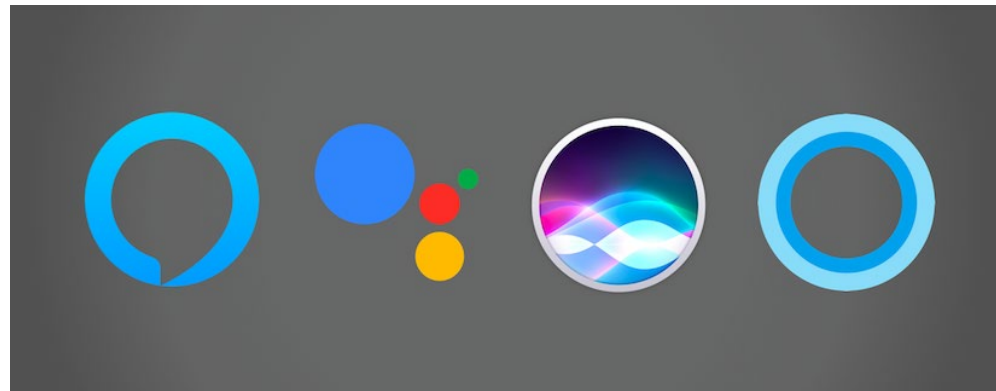
# Smart Speakers

- Internet connected
- Always listening for a hotword
- Embedded assistant
  - Answers simple questions
- Internet of Things compatible
- Make phone calls



# Digital Assistants

- Live in the Cloud
- Capable of recognizing requests and commands(Natural Language Processing) and take action



# Digital Assistant Capabilities

- Provide Information
  - Weather
  - Wikipedia, IMDB, etc
- Organize your day
  - Set Alarms
  - To Do Lists
  - Shopping Lists
- Play Media
  - Streaming Music/Radio/Audiobooks
  - Video
- Control Internet of Things Devices



# Amazon Echo Products

- Smart Speakers
  - Echo 2<sup>nd</sup> Gen
  - Echo Plus
  - Echo Dot
- Smart Displays
  - Echo Show
  - Echo Spot



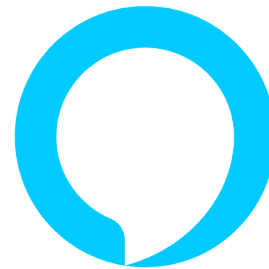
# More Amazon Echo Products

- Other
  - AmazonBasics Microwave
  - Echo Wall Clock
- Third Party
  - “Alexa Built In”
  - Smart Speakers
  - Headphones
  - Echo Auto



# Alexa Features

- Alexa Hunches
  - “Good Morning” “Do you want me to make coffee?”
- Ring Video Doorbell Integration
- Voice Calling and Messaging
  - Skype Supported



amazon alexa

# More Alexa Features

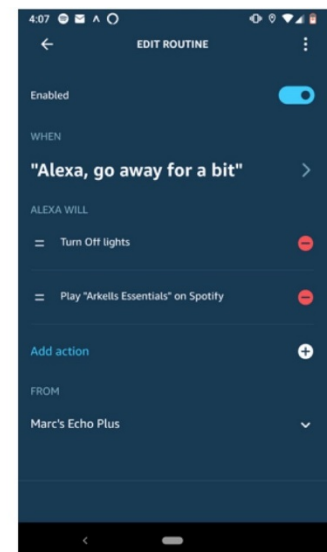
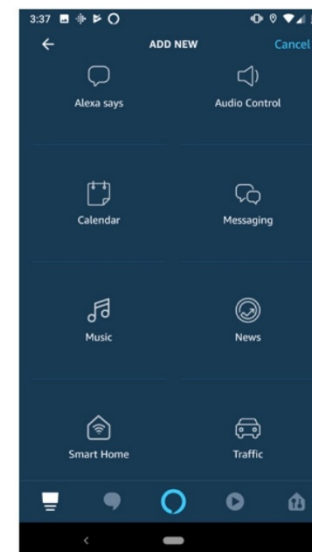
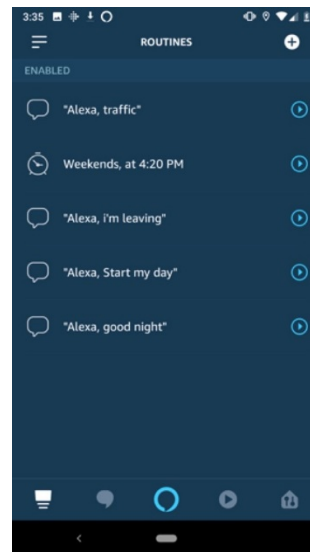
- Routines
- Broadcast
- Alexa Skills
- Audible
- Follow up Mode
- Order and Track Amazon Purchases





# Alexa Features: Routines

- Link multiple actions to a single command
- Temporal Context Sensitive
  - Before 11am, “Turn on Kitchen” opens shades and turns on coffee pot
  - After 5pm, “Turn on Kitchen”, closes shades, turns on lights
- Echo Button Support



# Google Home Products

- Smart Speakers
  - Google Home
  - Google Home Mini
  - Google Home Max
- Smart Display
  - Google Home Hub



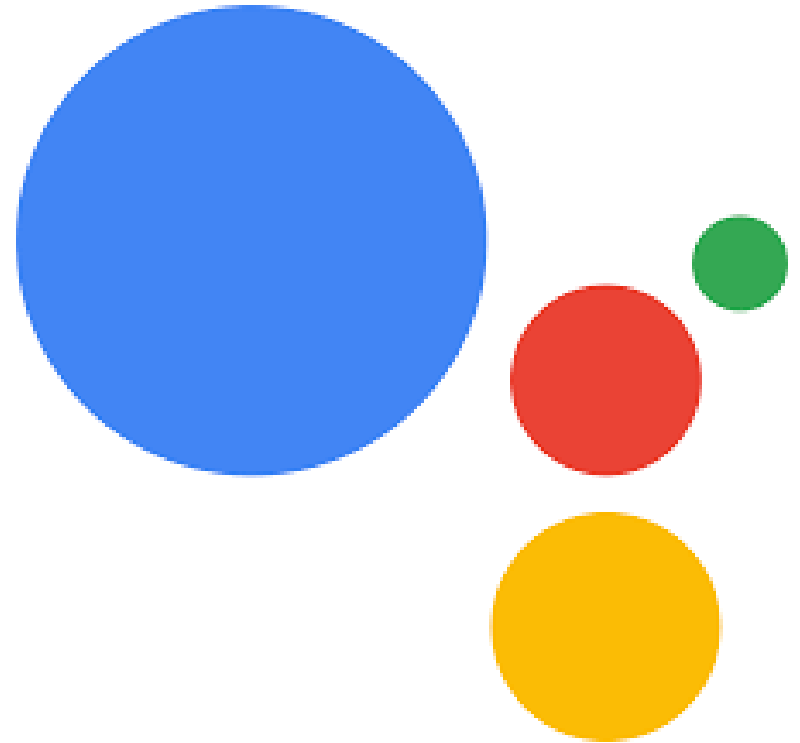
# More Google Home Products

- Third Party
  - “Google Assistant Built In”
  - Smart Speakers
  - Smart Displays
  - Android Smartwatches
  - Android TVs
  - Android Auto



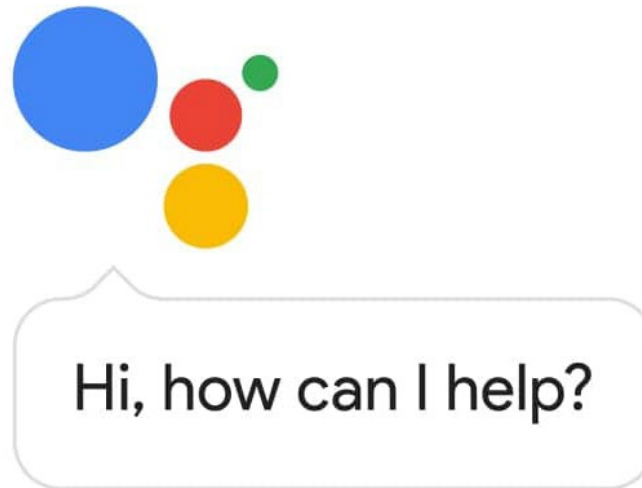
# Google Assistant Features

- Nest Video Doorbell Integration
- Voice Calling
- Broadcast
- Google Actions
- Chromecast Integration



# More Google Assistant Features

- Find my phone
- Night Mode
- Translation
- Routines
- YouTube



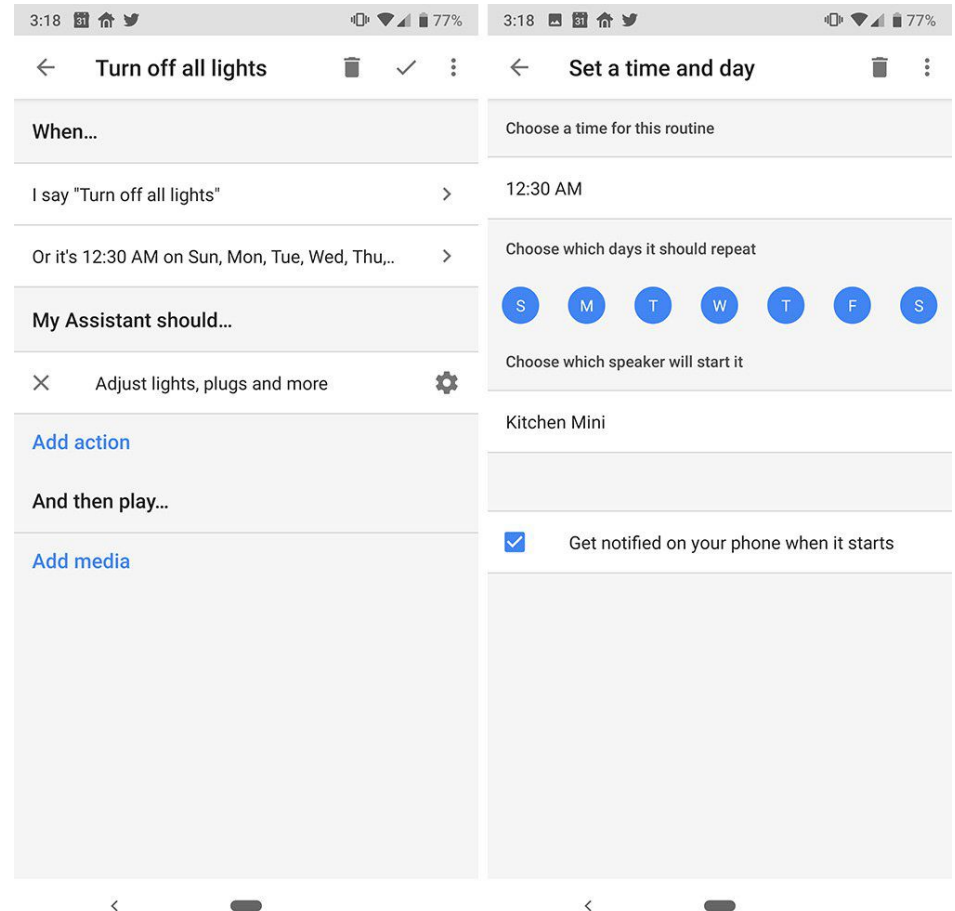
# Google Assistant Features: Chromecast Integration

- HDMI Dongle
- Make “dumb” TV “smart”
- Access apps
  - Netflix
  - YouTube
  - Music
  - Photos
- Say what you want to watch on your TV



# Google Assistant Features: Routines

- Google Home App
- Account > Settings > Assistant > Routines
- Allow custom voice commands
- Say one thing Google Home carries out one or more actions
- Multiple phrases for a single command





# Apple HomePod

- Easy Setup
- Automatically adjusts sound levels to environment
- Integrated with Apple Store and other Apple Software and Products



# Siri

- Easy Setup
- Automatically adjusts sound levels to environment
- Integrated with Apple Store and other Apple Software and Products



# Other Smart Speakers and Assistants

- Samsung Galaxy Home
  - Bixby
- Harmon Kardon Invoke
  - Cortana



# Other Means of Access

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# Housemate

- Switch access to phone
- Switch access to environmental control
- Bluetooth, Z Wave, HomeKit, IR, WiFi connected
- Custom voice commands through Siri
- Operates without internet access



# Tecla E

- Switch access to phone
- Wireless head array capability
- Bluetooth connection to smart phone
- 48+ hour battery life
- Tecla App allows access to various smart home commands (Harmony, Alexa, IFTTT)



# Smart Home Devices

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# Smart Home Lights

- Phillips Hue Light Bulbs
- Lix
- TP Link
- Usage Scenario
  - Barry sometimes has to go to the restroom in the middle of the night. He is able to turn the lights on before he gets out of bed ensuring he isn't at risk of tripping and falling.



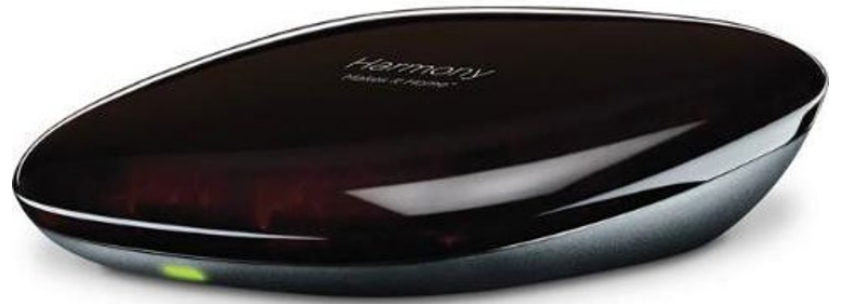
# Smart Plugs

- Make “Dumb” devices smart
  - Electric Blanket
  - Space Heater
  - Coffee Pot
  - Crock Pot
- Samsung Smart Plug
- TP Link Smart Wifi Mini
- TP Link Kasa Smart Power Strip



# Logitech Harmony Hub

- Control just about any IR enabled device
  - TV
  - DVD/BluRay/VCR
  - Sound System
  - Cable Box
  - Fan/Air Conditioner
- Supported by Google Home and Amazon Echo



# Fire TV Cube

- Works like an Echo Speaker
- Control TV, Soundbar, Cable Box, and select other devices
- Native Voice Control
  - “Watch Animal Planet”
- Fire TV Capabilities
  - “Watch Stranger Things”



# Samsung SmartThings Hub

- Hub connects all smart home devices
- Control devices remotely through app
- Routines
- Sensors
- Automation



# Schlage Z-Wave Home Keypad

- Control access to your home independently
- Single Use or Permanent PIN
- Hardware Key
- Z Wave through SmartThings Hub





Wrap Up



# Questions



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  - Handouts shared by the speakers are available for 3 months after the conference ends. [Find handouts here](http://www.atia.org/orlandohandouts) (www.atia.org/orlandohandouts).

# Speaker Information

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