Introduction to Environmental Control

Ben Jacobs
Accommodations Specialist, Tools for Life
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AMAC Accessibility Solutions and Research Center
Georgia Tech

www.gatfl.gatech.edu
www.amacusg.org

Session Presenters

Ben Jacobs

Accommodations Specialist

Tools for Life

Ben.Jacobs@gatfl.gatech.edu

Our Goal Today

- ✓ Share information about various environmental controls.
- ✓ Give examples/scenarios of using environmental control in various settings
- ✓ Demonstrate environmental control solutions

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TOOLS for LIFE
Georgia's Assistive Technology Act Program

Tools for Life Mission

We're here to help Georgians with disabilities gain access to and acquisition of assistive technology devices and assistive technology services so they can live, learn, work, and play independently in the communities of their choice.

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TFL Website

Georgia Tech TOOLS for LIFE
Georgia's Assistive Technology Act Program

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Welcome to Tools for Life

Tools for Life, Georgia's Assistive Technology Act Program, is dedicated to increasing access to and acquisition of assistive technology (AT) devices and services for Georgians of all ages and disabilities so they can live, learn, work

2015 IDEAS CONFERENCE

JUN 1 — Epworth by the Sea, St. Simons Island

2015 GATE SEMINAR

DEC 4 — Georgia Tech Student Center

WEBINARS

- Current Webinar Schedule
- Webinar Archives

TOOLS FOR LIFE APPFINDER

...for Living, Learning, Working, and Playing.

AT ONLINE EXCHANGE

gTRADE

AT FUNDING GUIDE

DOLLARS & SENSE
NAVIGATING THE AT FUNDING STREAM

TFL AppFinder

Search by:

- ✓ **App Name**
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  - Productivity
  - Communication
  - Therapeutic Aids
  - Vision

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What is Environmental Control?

Defining Environmental Control

- An environmental control device is a form of electronic assistive technology which enables people with significant disabilities to independently access equipment in their environment e.g. home, classroom and/or office.

- An environmental control controller is the device that controls the equipment – like a remote control. The controller is used to select a range of different options. Each option will control a piece of equipment in a certain way – for example: volume on a TV.

Who needs Environmental Control?

- Anyone with complete loss or minimal ability to control devices in their immediate environment (such as the television, computer, phones, lights, doors, etc.).

- Technology that allows a people with disabilities to gain this type of control has been called an environmental control system and/or units (ECS, ECU).

Types of Environmental Control

1. **Switch** - the user activates an accessible switch to control the environmental control unit, generally done through menu scanning.
2. **Voice** - the user speaks the commands to the environmental control unit " turn on bedroom light."
3. **Both**

✓ The more options available (switch, voice, and/or both) the more independence can be gained.

✓ **Tip!** Look for the ability to customize or combine the control (input) devices to meet needs. While a voice-activated system can give the most independence, one's voice can become weak by the end of the day, so an ECU that can be controlled by both voice and switch may be very beneficial.

Critical Questions for Environmental Control

Critical Questions #1

- What do you want to control?
  - Computer
  - Game
  - TV
  - Lights
  - Appliances
  - Chair
  - Door
  - Smartphone

Critical Questions #2

- What access can be automated?
  - Timers
  - Schedules
  - Scenes

Critical Questions #3

- Could the environmental control unit (ECU) be mounted?
- If so, where?

  - □ Wheelchair
  - □ Table
  - □ Desk
  - □ Countertop

Critical Questions #4

- How will the ECU be accessed/controlled?

  - □ Direct
  - □ External
  - □ Switch(es)
  - □ Scanning
  - □ Voice

A Closer Look at Environmental Control Solutions

Castle OS and Castle Hub

- Chris Ciccitelli has been a fan of Star Trek and was fascinated by the idea of a computer listening to you and taking any action requested. Sometimes it was just retrieving information, other times it controlled different ship functions.
- Chris worked for years creating a system for home automation/control that emulated the computer on Star Trek.
- Castle OS and Castle Hub are able to control all other EC devices regardless of what protocol it uses.
- This system operates using the microphone array in the Kinect camera to listen to you from anywhere in the room.

Amazon Echo

- Speech-controlled speaker system
- Voice recognition – Always Listening
- All functions are server side
- Skills downloadable
- Voice calling for phones with Alexa App installed
- $179.99

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Philips Hue Light Bulbs

- Wifi Connected
- Dimmable
- Displays Over 16 Million Colors
- Compatible with Amazon Echo
- Color Starter Kit $174.99

Google Home

- Google's answer to the Amazon Echo
- Features Google Assistant
- More Conversational
- Skills are automatically enabled
- Call any number in US and Canada free.
- $129

Xbox One with Kinect

- Control your entertainment with your voice
- Netflix, Skype, Youtube, Internet Browser, Music, Television, etc.
- Gesture Control
- Price varies depending on bundle.
- Xbox One ~ $350
- Kinect ~ $100

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Logitech Harmony Remote

The Logitech Harmony Remote product line has recently added a hub and an app for your mobile device that allow you to control your entertainment devices.

Multiple tasks, such as turning on the TV, switching it to the appropriate source, turning on the cable box and the audio receiver can be programmed into a single button.

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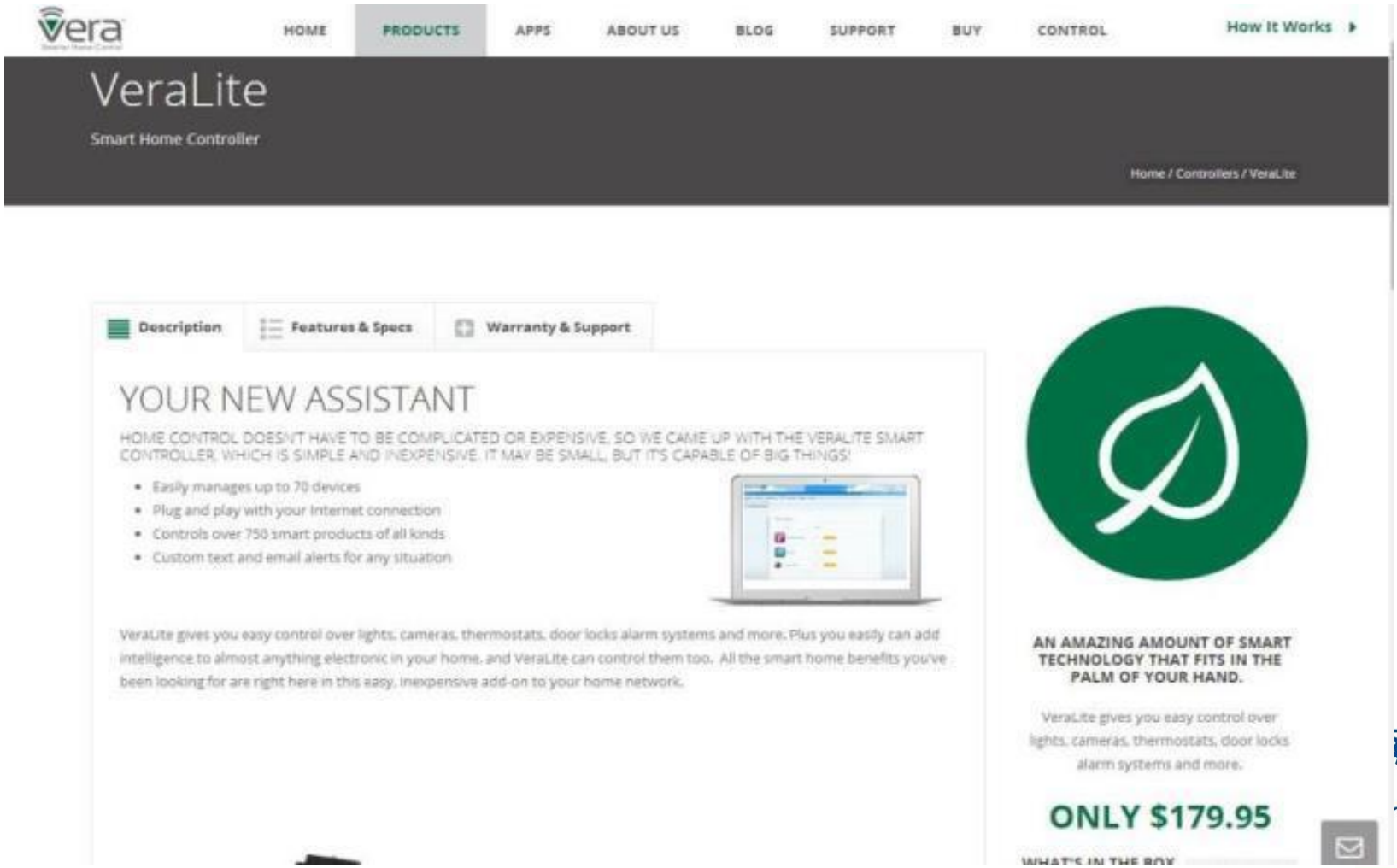
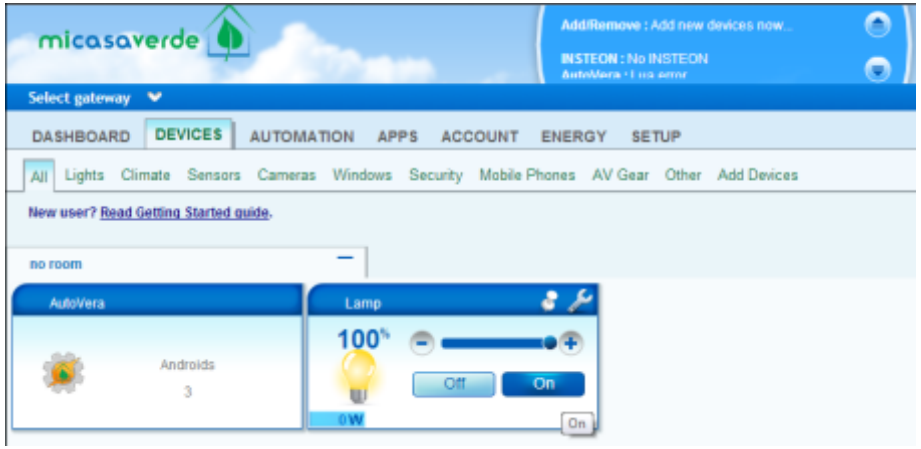
Vera and Veralite



Vera User Interfaces

Vera gateways can be controlled with a number of different interfaces.

- First Party Software
  - PC
  - MAC
  - Smartphone App



- Third Party Software
  - Smartphone Apps
  - TASKER! (Android only)

Tasker

Tasker is a phone automation application that allows you to really unleash your android device's capabilities.

Tasker in a nutshell is a program that tells your device "When this happens, do this!"

- "When something is plugged into the headphone jack, open my music app"
- "When I open the navigation app, turn GPS on"
- "When my phone is connected to this cell tower, turn on wifi and connect to my home wifi"

More on Tasker

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Plugins for Tasker allow you to access other features of your phone and interface with other internet connected devices.

- Autovoice – Allows you to set up custom voice commands and turn always listening on
- Autocast – Enables you to control a Chromecast device on your TV
- Autovera – Interfaces with your Vera gateway

TFL Environmental Control Lab

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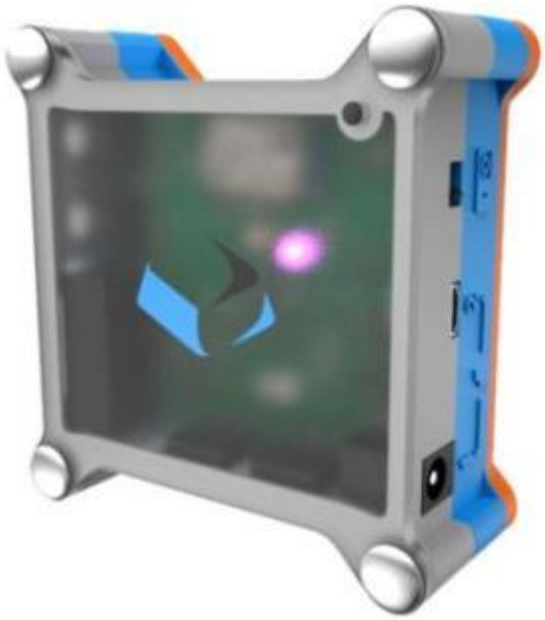
Tecla Shield

- Wireless device that controls smartphones and tablets using your external switches or the driver controls of your power wheelchair
- The only switch interface that works with both iOS® and Android mobile devices.



Eyegaze Edge

- Control computer and tablet using your eyes
- Environmental Controls
- Communication

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Resources

- http://en.wikipedia.org/wiki/Environmental_control_device
- http://www.ncbi.nlm.nih.gov/pubmed/15614204
- http://www.etoengineering.com/environmental_control_unit.htm
- http://getvera.com/controllers/veralite/

Questions

Our question to you:

What have you learned today?

The Tools for Life Team

Carolyn Phillips
Director, Tools for Life
carolyn.phillips@gatfl.gatech.edu

Justin Ingham
Support Specialist
jingham3@gatech.edu

Samantha Peters
Program Specialist
speters37@gatfl.gatech.edu

Sarah Endicott
Research Scientist
sarah.endicott@design.gatech.edu

Asha Kumar
AT Lab Specialist
asha.kumar@gatfl.gatech.edu

Liz Persaud
Training Coordinator
liz.persaud@gatfl.gatech.edu

Tori Holder
Outreach Specialist
tori.holder@gatfl.gatech.edu

Ben Jacobs
Accommodations Specialist
ben.jacobs@gatfl.gatech.edu

Martha Rust
AT Specialist
martha.rust@gatfl.gatech.edu

Danny Housley
AT Funding & Resource Specialist
danny.housley@gatfl.gatech.edu

Krista Mullen
Speech Language Pathologist
krista.mullen@gatfl.gatech.edu

Rachel Wilson
AT Specialist
rachel.wilson@gatfl.gatech.edu

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