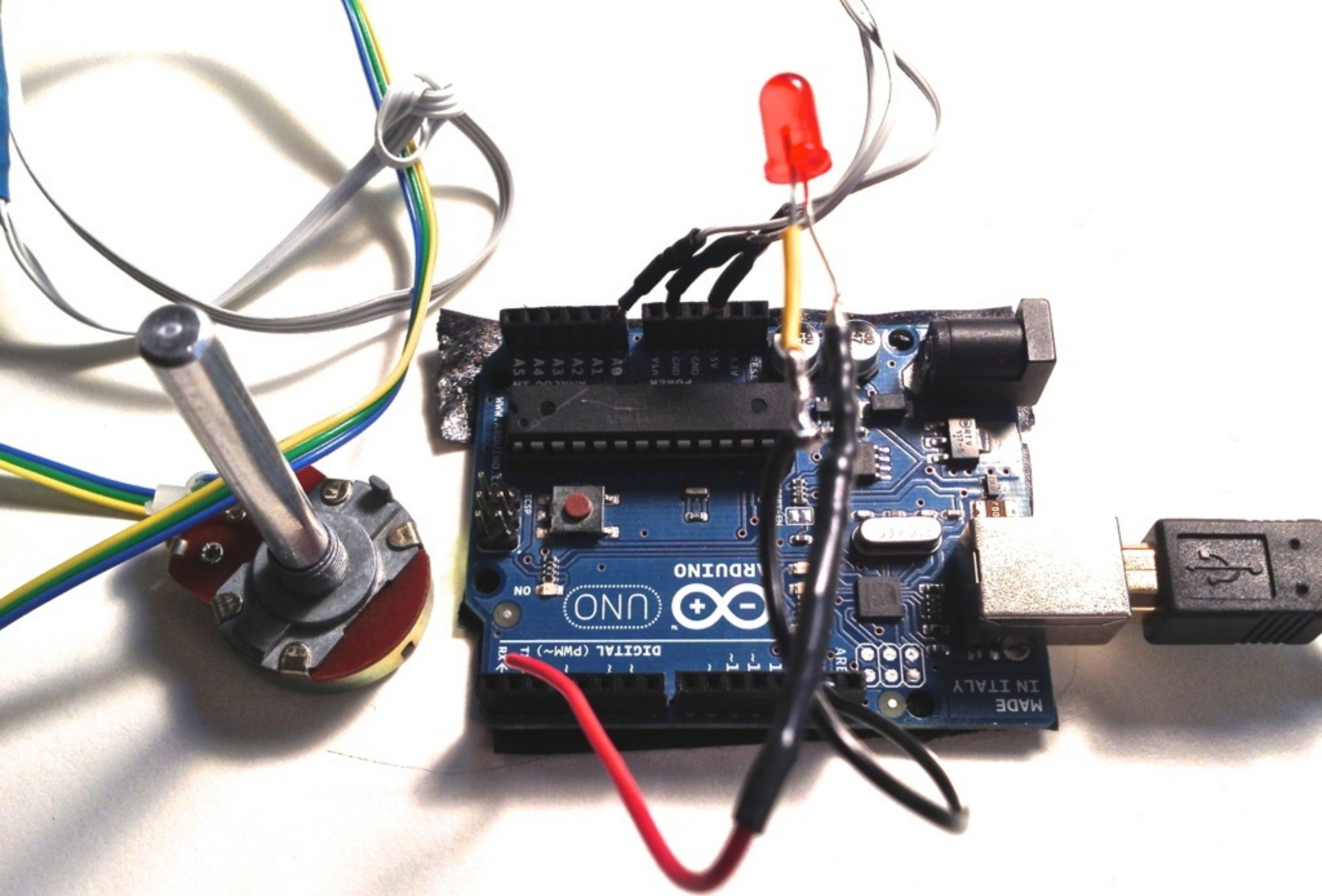# Sketching in the Cloud Future Toolkit Directions

Philip van Allen
Art Center College of Design
NETLabToolkit.org

Andrew Nagata

Link Huaug
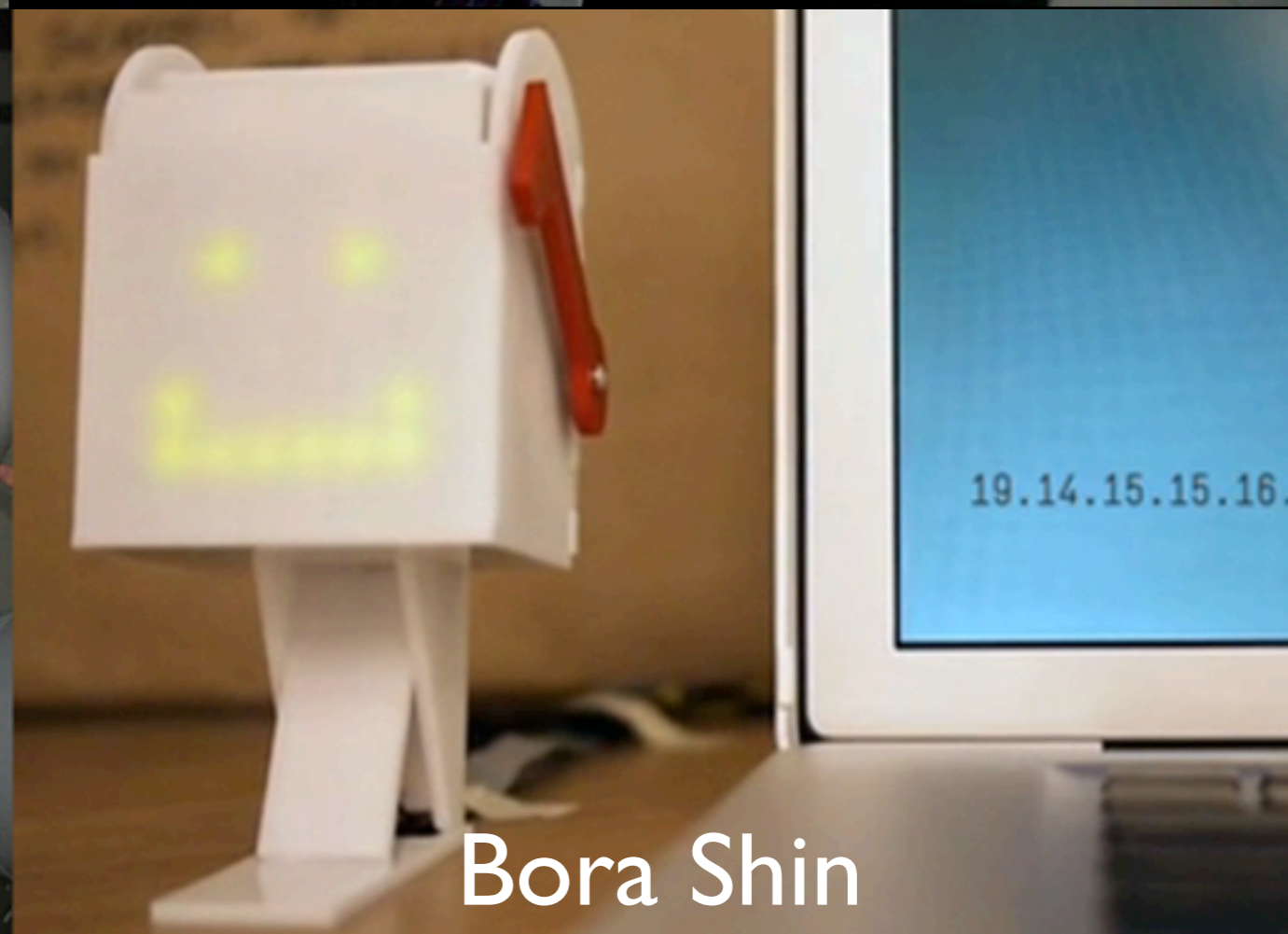
Jed Berk

Bora Shin

19.14.15.15.16.
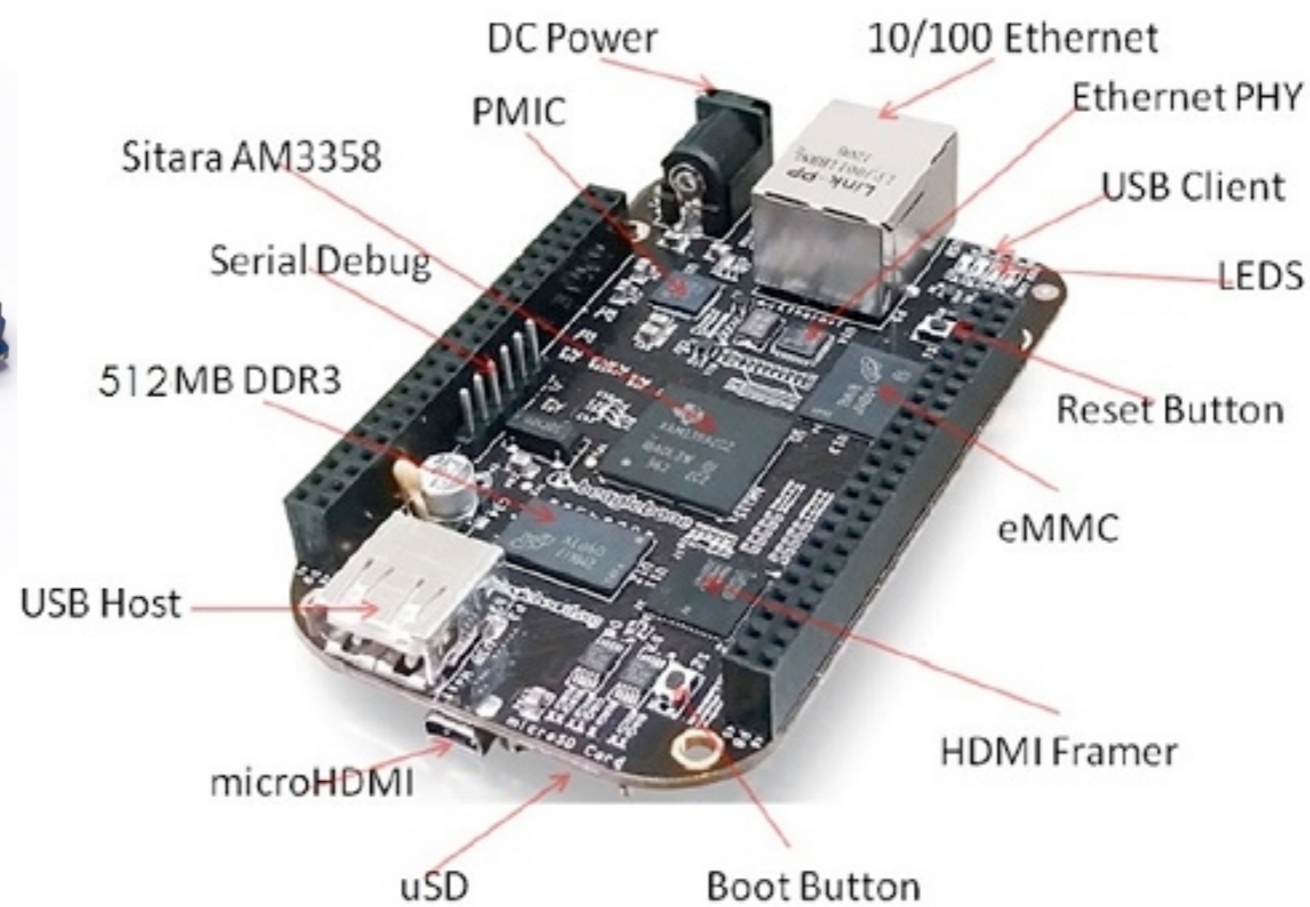
Networked, and involve multiple systems , have a particular behavior and personality,

Since 2005 I've been teaching a class called The New Ecology of Things which explores Ubicomp and Animism. Many of the projects, like those shown here, use animistic cues to imply an inner–life, intention, and personality. And in particular, they explore how notions of animism can play out in a ubicomp setting where there are many autonomous systems.

* Andrew Nagata's Internet of Tumbleweeds - playful communicative systems
* Link Huang's Wishing Machine - mythical alter-like device
* Jed Berk's Autonomous Light Air Vehicles - networked blimps
* Bora Shin's Curious Mailbox - monitors and reacts to your email

DC Power
PMIC
Sitara AM3358
Serial Debug
512MB DDR3
10/100 Ethernet
Ethernet PHY
USB Client
LEDS
Reset Button
eMMC
HDMI Framer
USB Host
microHDMI
uSD
Boot Button

Dumb/Simple – Bluetooth Low Energy
Smart/Simple – Arduino etc.
Dedicated – NEST, Belkin WeMo, etc.
Embedded OS – BeagleBone Black etc.
Wearables/Phones/Tablets/TVs
Cloud services – local or remote
Evernote and Dropbox – databases of media – tagged text, video, sound, etc.

What should toolkits look like?

First we have to understand where we might be going...

Design Fiction: AniThings Heterogeneous Multiplicity

An Ecology of Six Tangible, Interactive Objects with Distinct Personalities

with Joshua McVeigh Shultz, Brooklyn Brown, Hye Mi Kim, Daniel Lara

AniThings is a research project I presented at this year's CHI conference in May

The PASSIVE WALL

Wall Proxy

The NEEDY   The NERD   The NEOPHILE   The NOSTALGIC   The NETWORKER
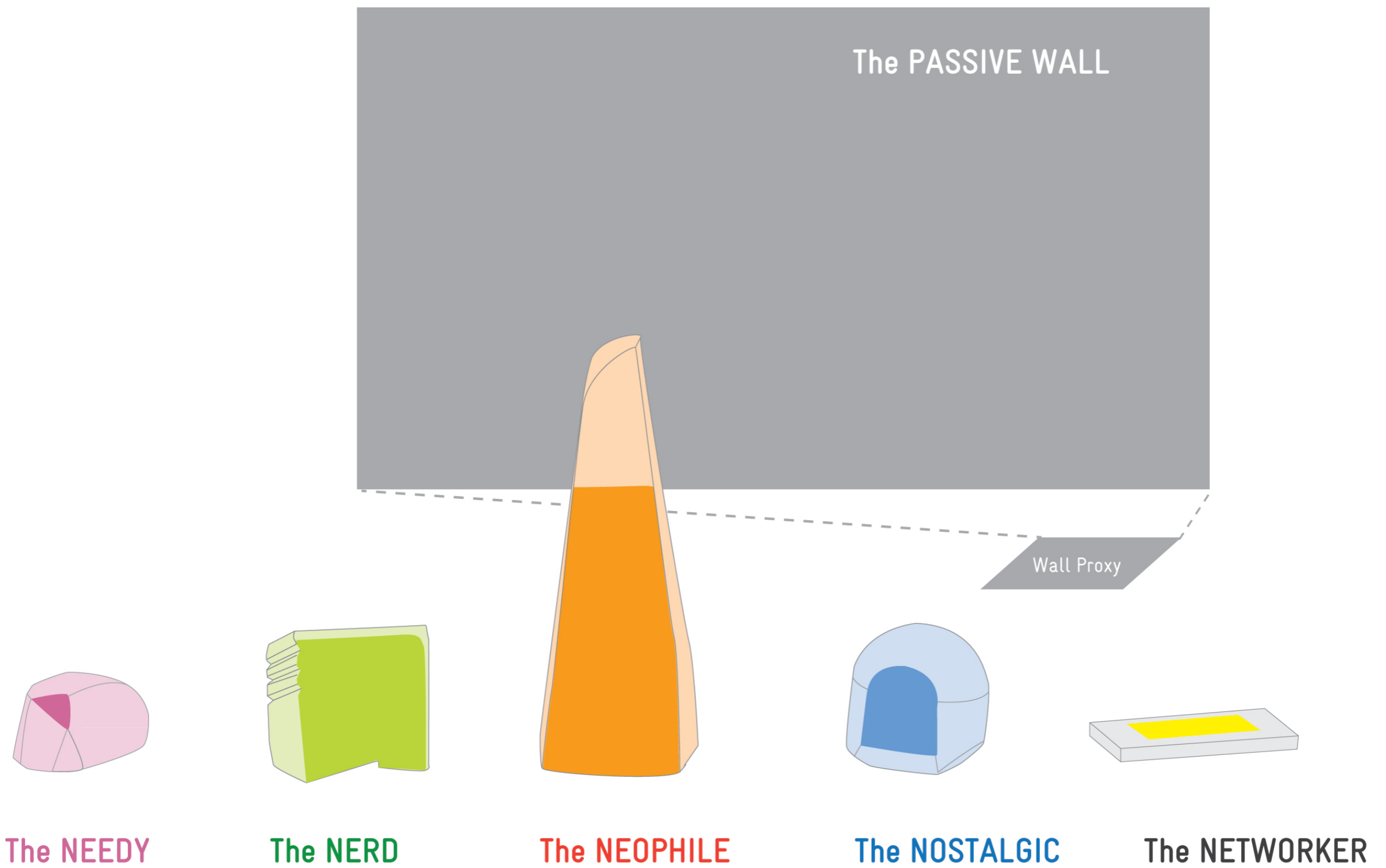
The AniThings are an ecology of six tangible, interactive objects with distinct personalities

Needy

Seeks attention from people and other AniThings

In this fictional scenario, Stella is depicted as a product designer who is brainstorming potential new medical devices. The AniThings live in her studio and draw on a range of digital material including Stella's personal collections and the Web.

The objects daydream, find references they're interested in, do research on request, as well as collect and share their findings with each other and the designer through text, visuals, video, sound and networks.

This is the core of the Heterogeneous Multiplicity approach. Each device behaves autonomously, with a distinct personality and approach, seemingly having its own intentions, history, interests, and moods. For example, in the upper left, you see the "NEEDY" AniThing, which always seeks a lot of attention.

THEY ALL BECOME INTERESTED IN THE NOSTALGIC'S CONTENT.

Nostalgic

Dwells on existing user information, methodical, focused, sometimes dreamy

Here, the Nostalgic has found a magazine in Stella's collection with an article on Tron, and the other objects have taken notice. Nostalgic dwells on existing user info, and is methodical, focused, and sometimes dreamy.

Neophile
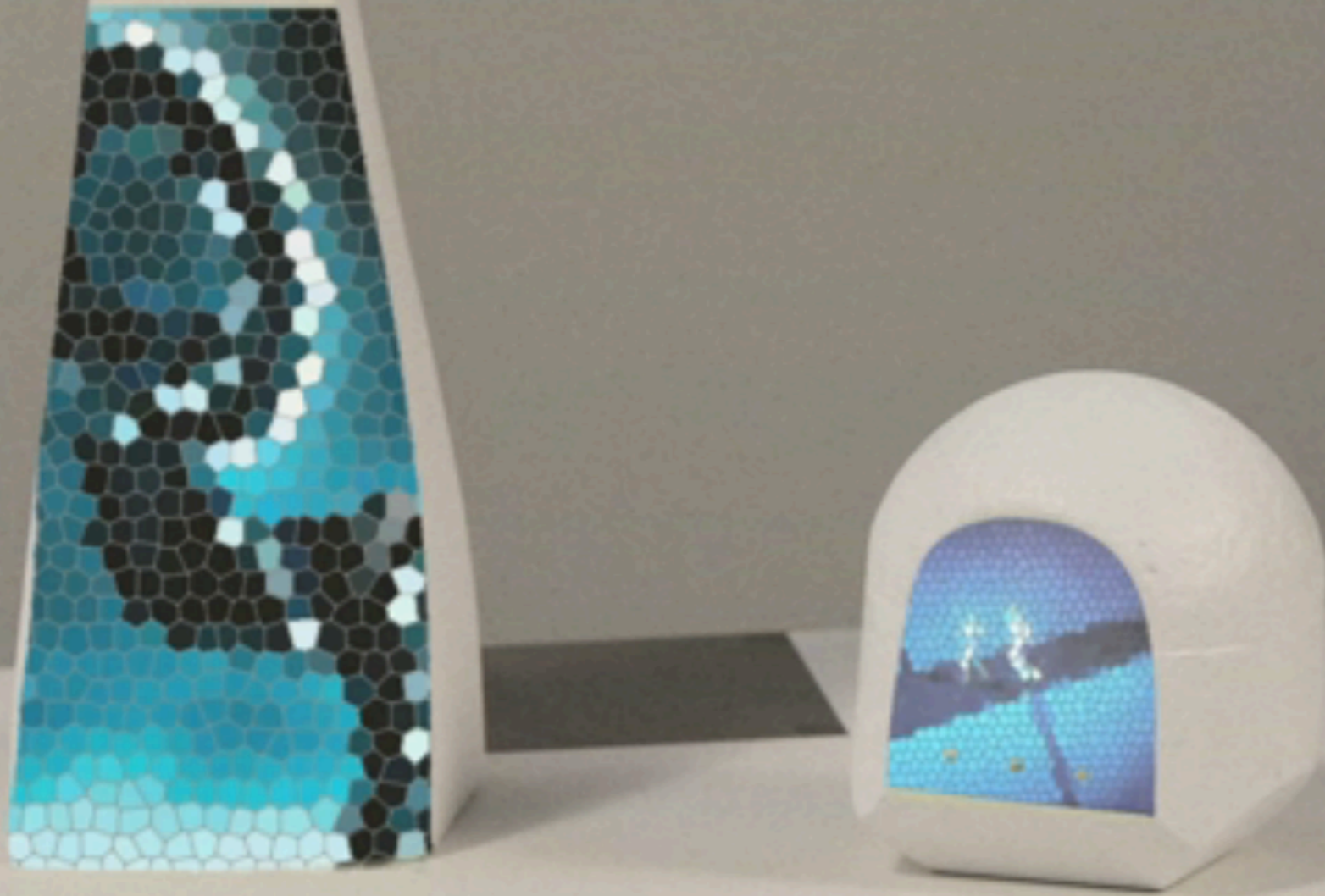
Proud of finding new information, fast, manic, short attention span

Here, the Neophile is exploring the movie Tron, having picked it up from the Nostalgic. The Neophile's personality is fast, manic, with a short attention span.

So you can see here that we've taken the animism concept and applied it across multiple, heterogenous objects that are independent, yet communicate and act within an ecology.

To think this through, we created a series of simple videos that explored our ideas through a design fiction approach. Let me show you a couple:

THE ANITHINGS
INSPIRE

[beginning] Stella walks into here studio to find that the AniThings have been at work.

[At end] Now that Stella has been inspired, she's ready to move on to a more targeted phase of design where she works with the AniThings in doing specific research on wearables.

THE ANITHINGS
RESEARCH

So, now that Stella has some design ideas in the next part of the scenario she goes on to work in collaboration with another designer and the AniThings.
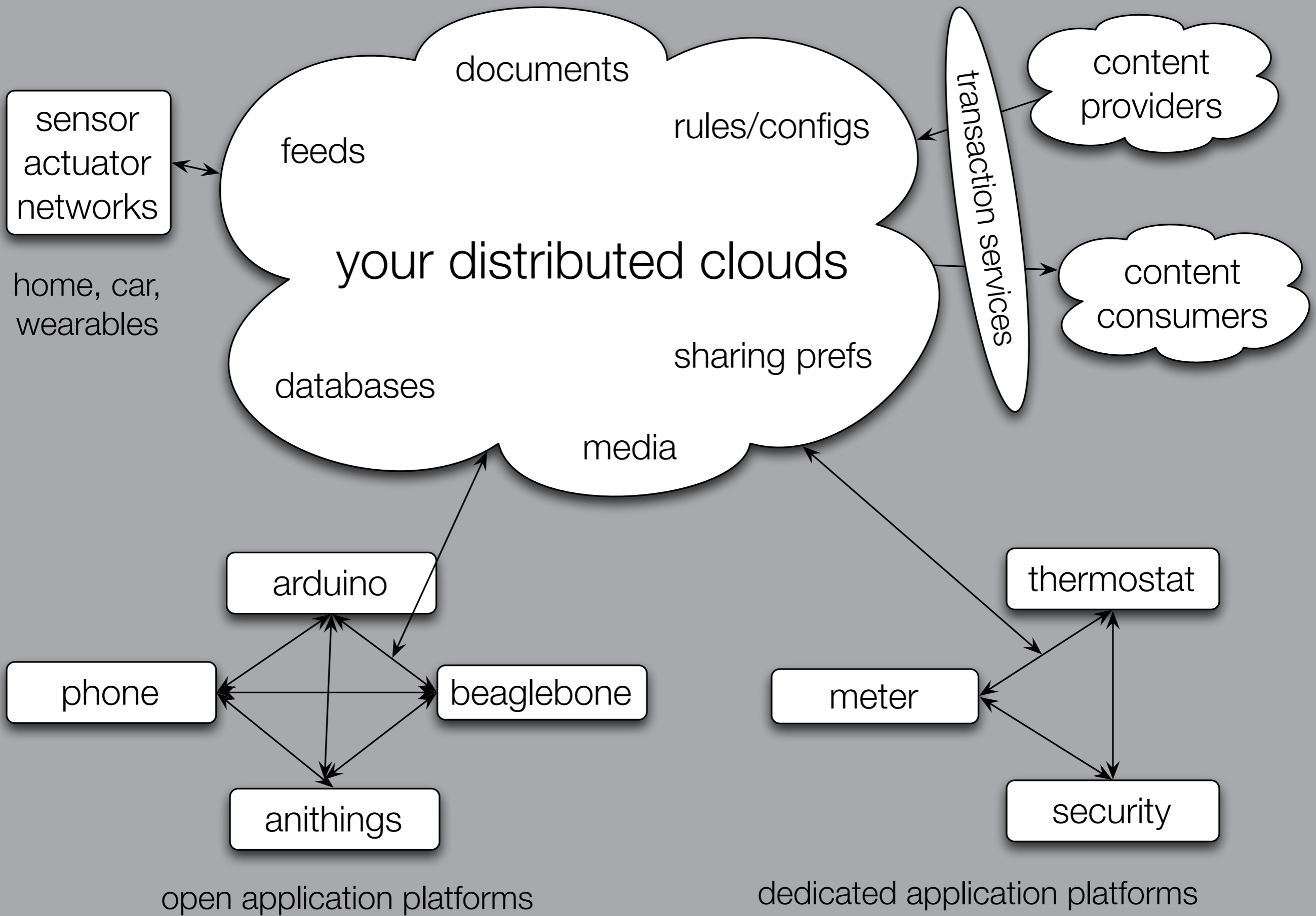
Stella draws on the AniThings provocative, diverse, and stimulating range of perspectives. So by interacting with this animistic and serendipitous chorus of voices and actions, Stella starts to build serendipitous connections linking Tron, wearables, and the context of healthcare.

Digital Ecologies

Networks of networks of heterogeneous things, people, data, media, processes, software

This stuff has personality, behavior, history, and social relations

Little hierarchy – mostly peer to peer
Distributed software and control
Local and remote connections

sensor actuator networks

home, car, wearables

documents

rules/configs

feeds

your distributed clouds

databases

sharing prefs

media

transaction services

content providers

content consumers

arduino

phone

beaglebone

anithings

open application platforms

thermostat

meter

security

dedicated application platforms

Data – numeric, text, boolean, audio, video, databases, rules, metadata, etc.
Social relations: Machines&People
Rules: who [reads,writes,pays] what

Platforms

Xively, ThingSpeak, Sen.se, Paraimpu, IFTTT

Twine, NinjaBlocks, IOBridge, WeMo...

NETLab Toolkit, Spacebrew, Modkit

Standards: IoT Toolkit/OSIOT, Argot, MQTT

Authoring Needs

Distributed authoring/deployment

Open standards - Discovery, comms

Rights/Payment Transaction Services

Collaboration

Easy authoring but production ready

Design personalities

NETLab Toolkit Kickstarter
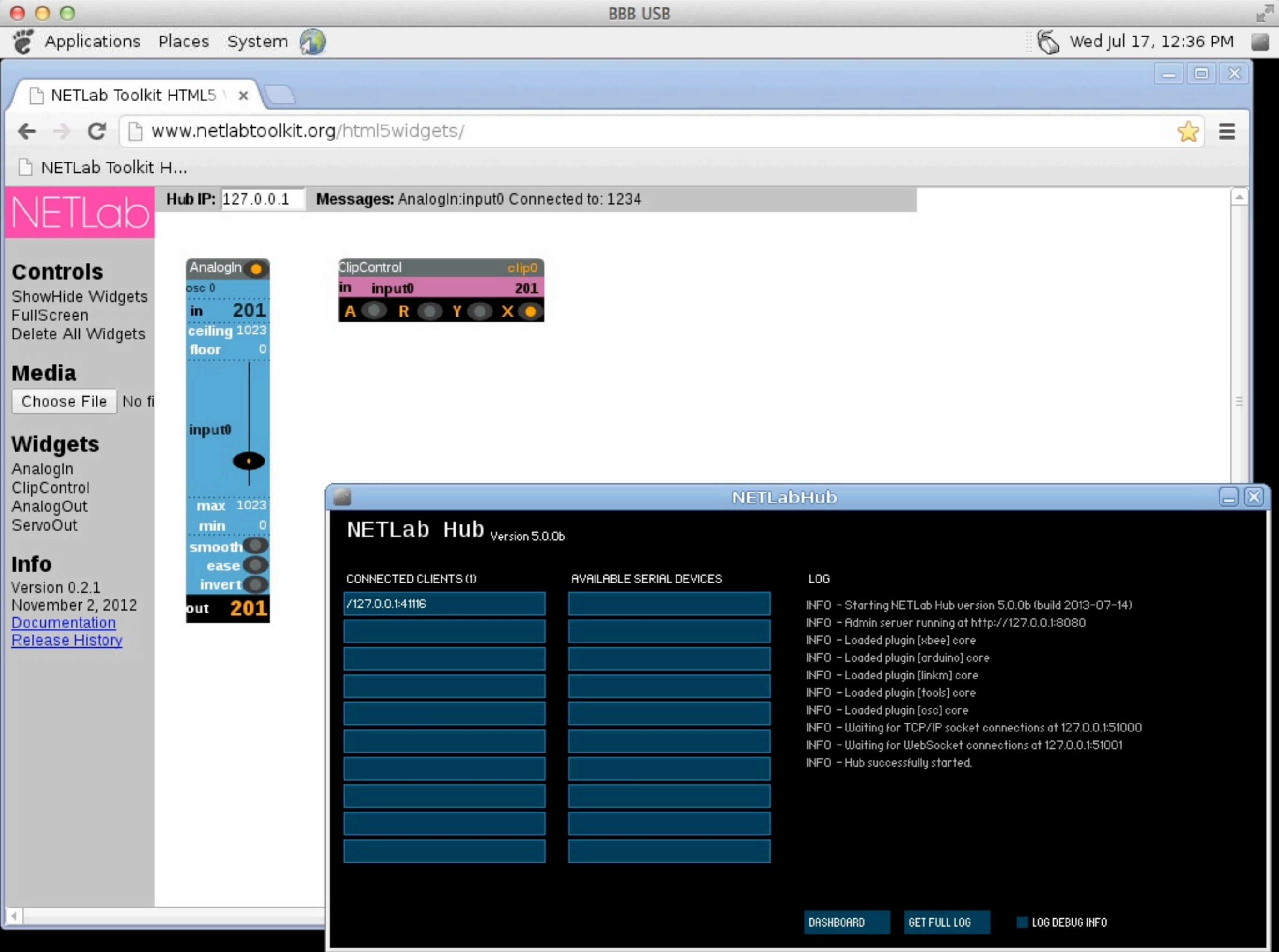
HTML5, Cloud Based Widgets

Platform agnostic

Touch compatible

Sharing of projects

Export widget projects as code

1023

Arduino

Input   0

MIN 200   MAX 200

CEIL   0   FLOOR 1023

Ease

A drag and drop, programming–optional toolkit

Applications   Places   System

Wed Jul 17, 12:36 PM

NETLab Toolkit HTML5   x

www.netlabtoolkit.org/html5widgets/

NETLab Toolkit H...

NETLab

Hub IP: 127.0.0.1   **Messages:** AnalogIn:input0 Connected to: 1234

Controls

ShowHide Widgets
FullScreen
Delete All Widgets

Media

Choose File   No fi

Widgets

AnalogIn
ClipControl
AnalogOut
ServoOut

Info

Version 0.2.1
November 2, 2012
Documentation
Release History

AnalogIn
osc 0
in   201
ceiling 1023
floor   0

input0

max   1023
min   0
smooth
ease
invert
out   201

ClipControl   clip0
in   input0   201
A   R   Y   X

NETLabHub

NETLab Hub   Version 5.0.0b

CONNECTED CLIENTS (1)	AVAILABLE SERIAL DEVICES	LOG
/127.0.0.1:41116		INFO – Starting NETLab Hub version 5.0.0b (build 2013-07-14)
		INFO – Admin server running at http://127.0.0.1:8080
		INFO – Loaded plugin [xbee] core
		INFO – Loaded plugin [arduino] core
		INFO – Loaded plugin [linkm] core
		INFO – Loaded plugin [tools] core
		INFO – Loaded plugin [osc] core
		INFO – Waiting for TCP/IP socket connections at 127.0.0.1:51000
		INFO – Waiting for WebSocket connections at 127.0.0.1:51001
		INFO – Hub successfully started.

DASHBOARD   GET FULL LOG   LOG DEBUG INFO

Thank you

Philip van Allen
Art Center College of Design
Media Design Practices Department

netlabtoolkit.org
vanallen@artcenter.edu
@philvanallen