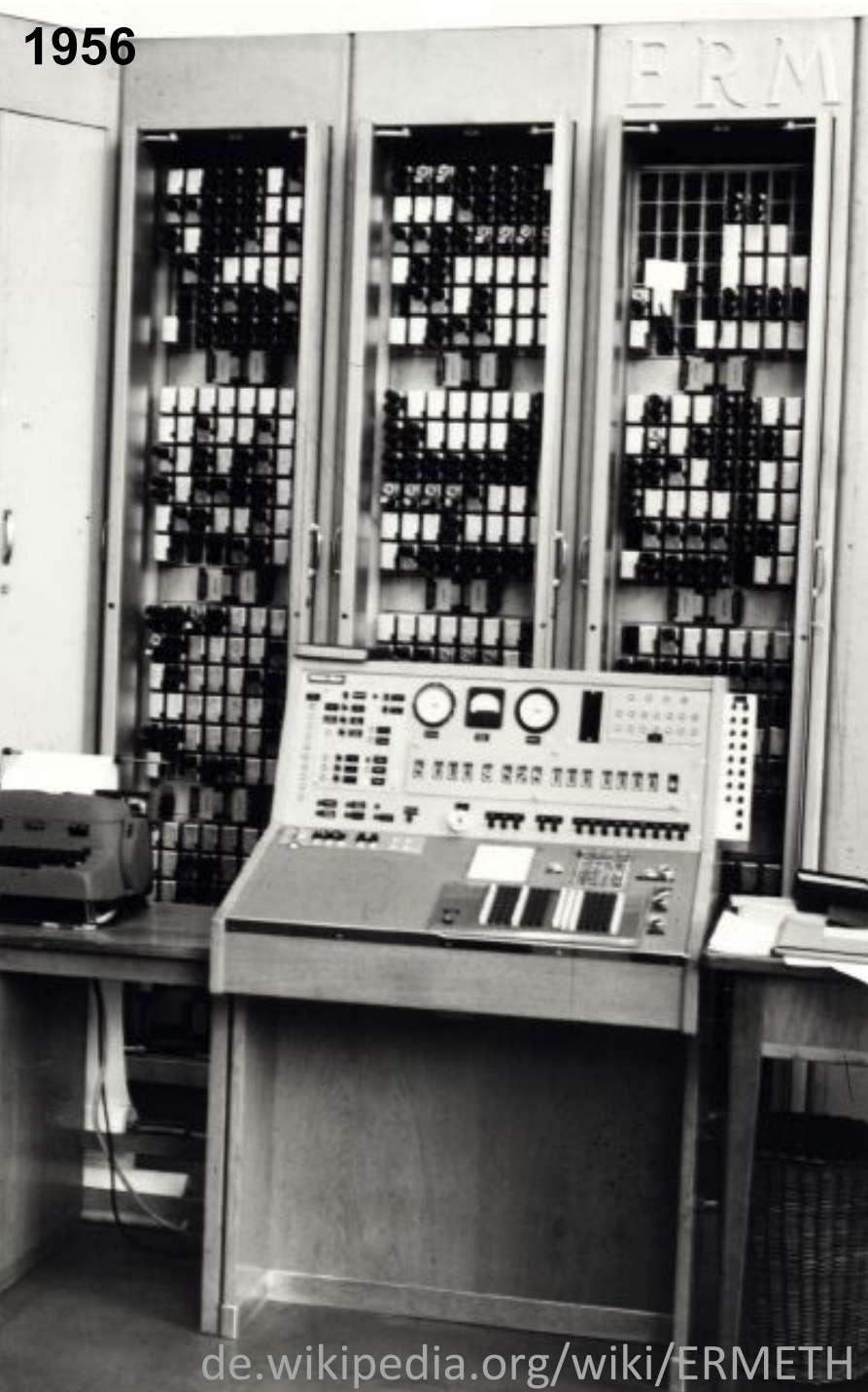


# Internet of Things

thomas.amberg@yaler.net

1956



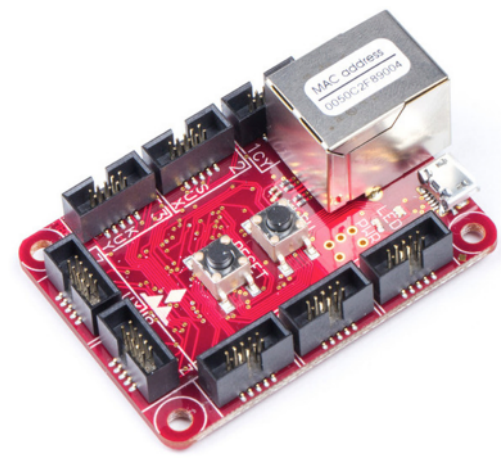
[de.wikipedia.org/wiki/ERMETH](https://de.wikipedia.org/wiki/ERMETH)

1990



Archiv D-INFK

2012



[mountaineer-boards.com](https://mountaineer-boards.com)



withings.com



Visualize Your Progress

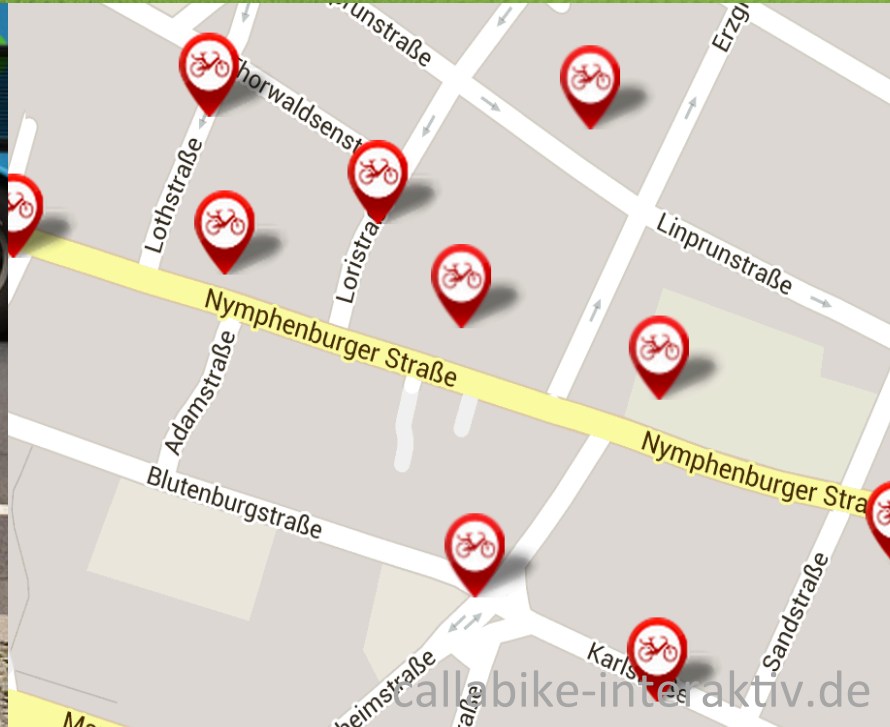


Play With Friends



nikeplus.nike.com









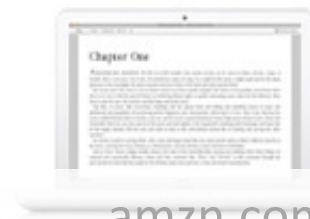
## Honda Jazz Hybrid



Economy

mobility.ch


"Buy once, read everywhere"







amzn.com/kindle

Find your people - Meetup

www.meetup.com/find/?allMeetups=true&radius=50&userFreeform=Zürich%2C+Switzerland&mclId=z1005076&mcName=Züric...

 **Find**  
a Meetup Group

**Start**  
a Meetup Group



Your Next Meetup

SEP

29

IoT Zurich

**LoRaWAN Connectivity for IoT**

Tuesday, September 29 at 6:00 PM

30

Meetups in your groups

439

Meetups nearby

All Meetups

Q


within 50 miles of Zürich, CH

Groups


Calendar

Your Meetups


Sort by Recommended



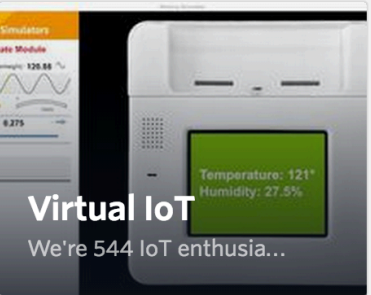
**IoT Zurich**  
We're 788 Members



**3D Printing Zürich**  
We're 391 Members



**Hardware Startup Zürich Meetup**  
We're 151 Members

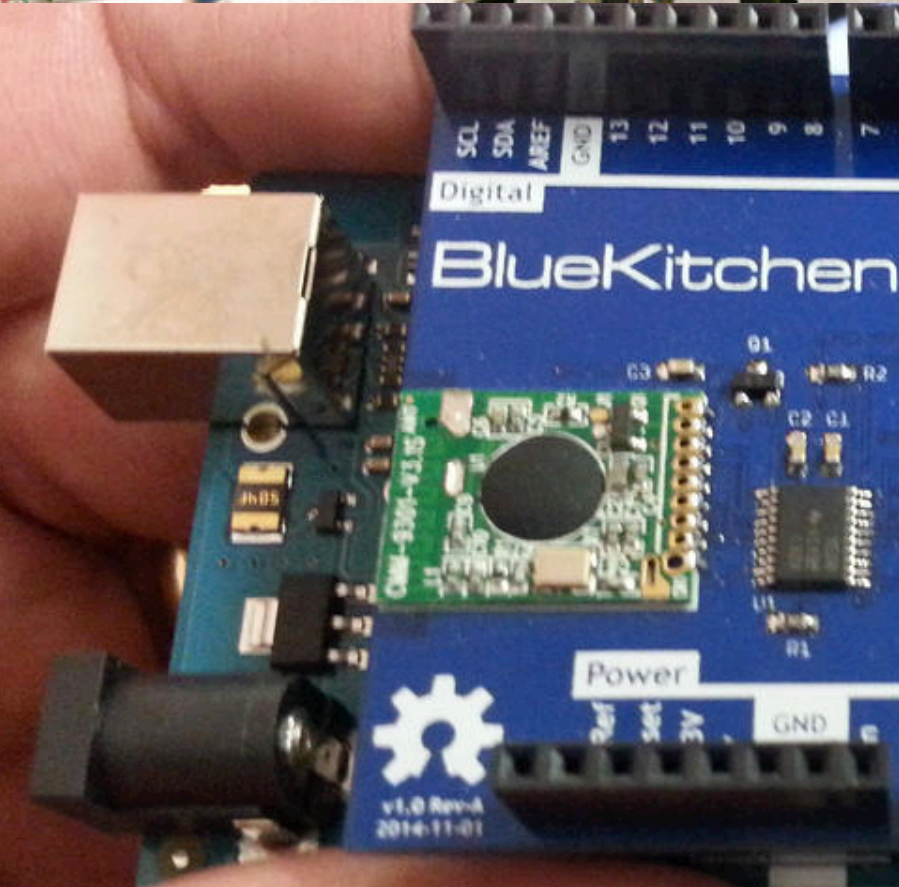


**Virtual IoT**  
We're 544 IoT enthusia...





Boaz Heller, CC BY-SA

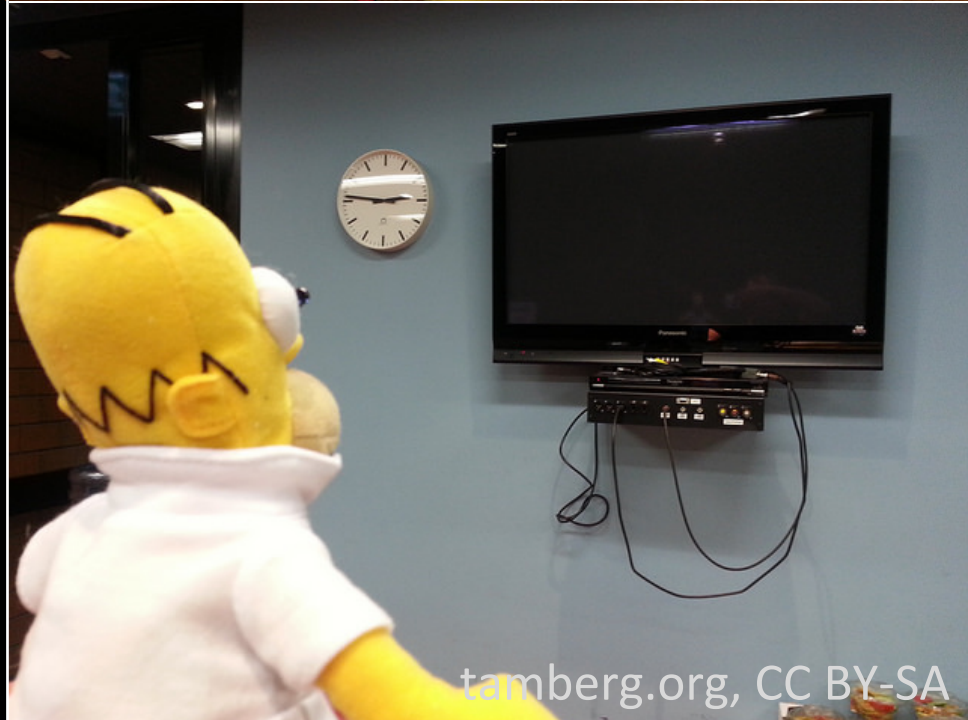
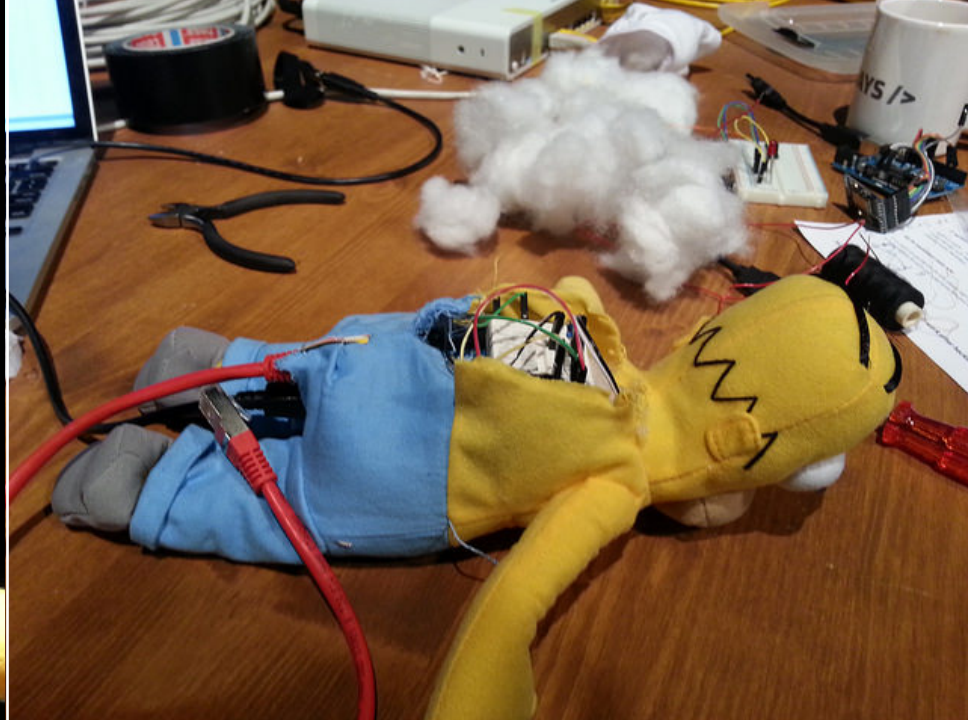


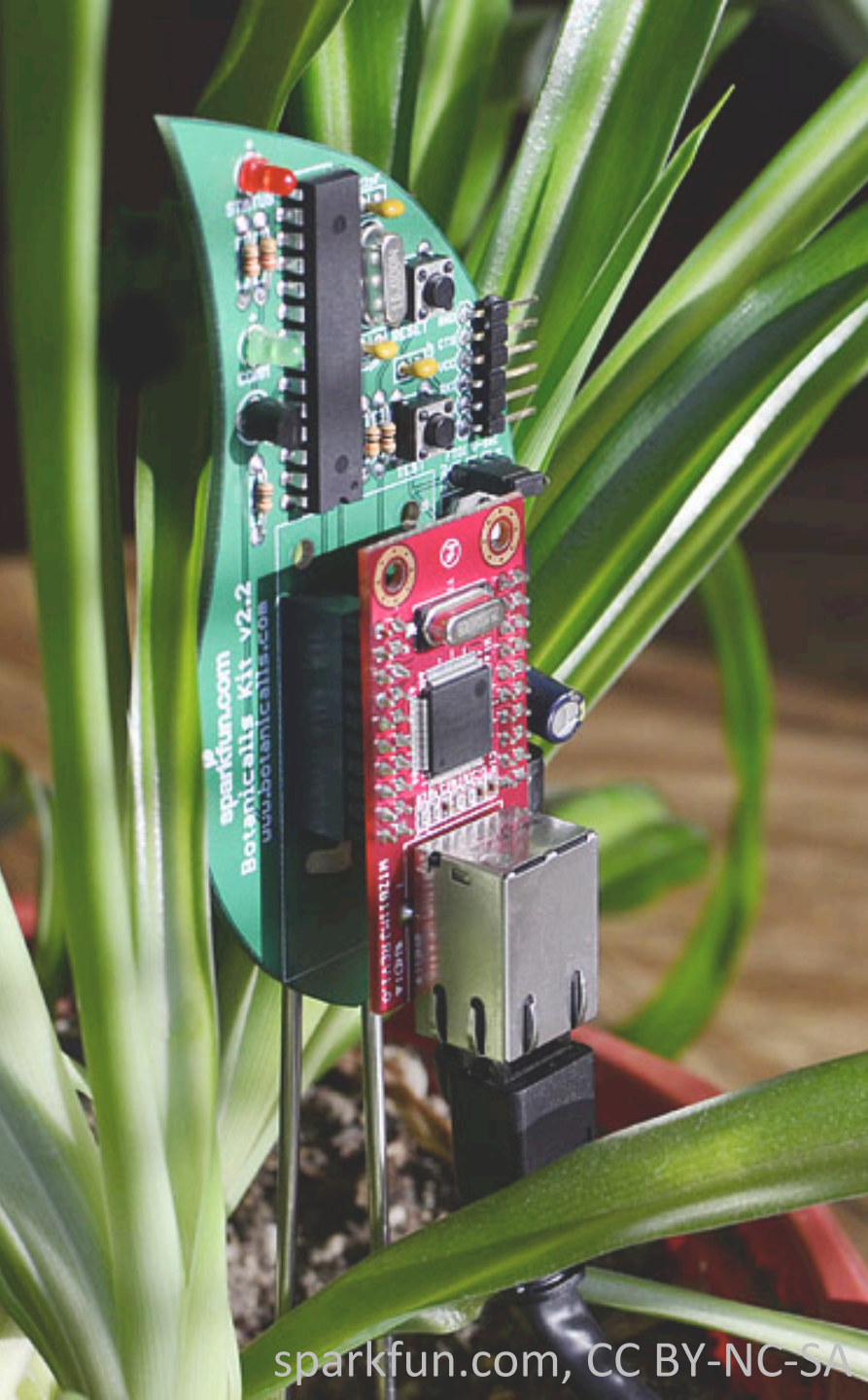
tamberg.org, CC BY-SA



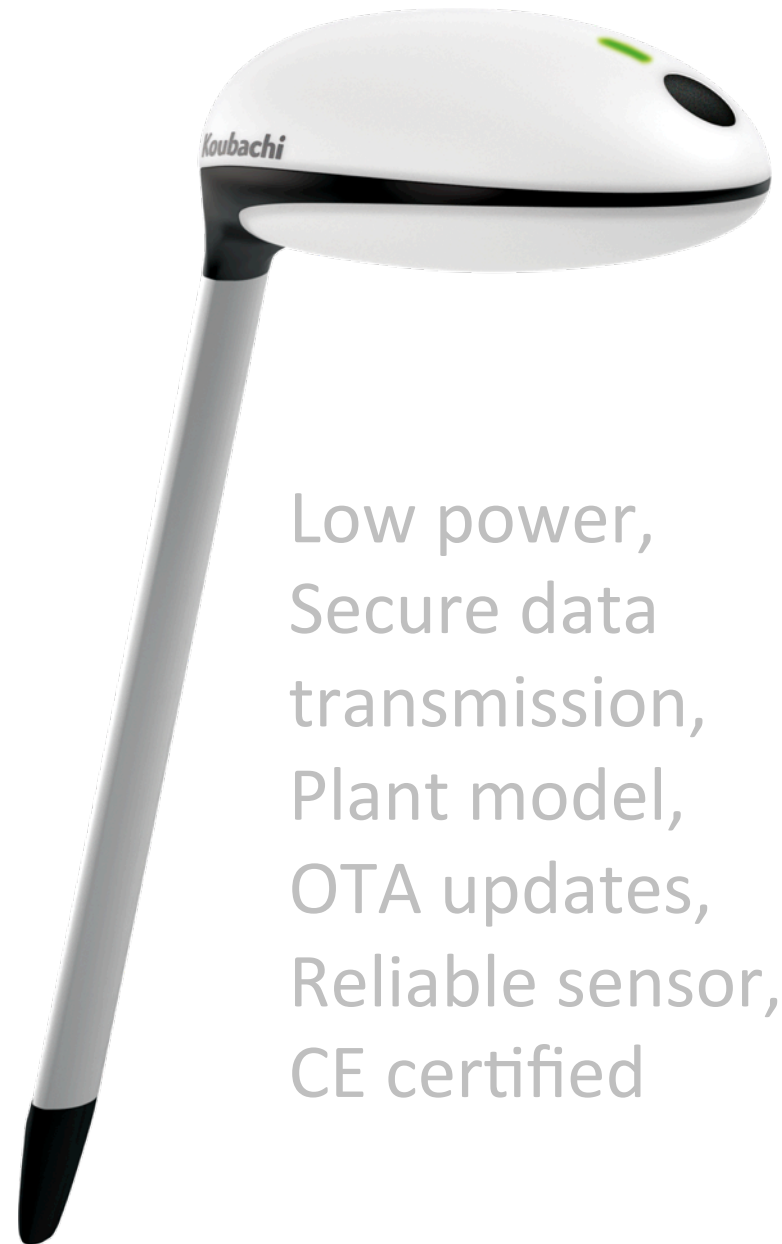








sparkfun.com, CC BY-NC-SA



Low power,  
Secure data  
transmission,  
Plant model,  
OTA updates,  
Reliable sensor,  
CE certified

koubachi.com



Yaler.net - access devices

Yaler.net

Yaler.net

StatusDocs & HelpPricing & Sign upLog in

# Access devices from the Web

Yaler provides a **relay infrastructure** for secure, controlled and manageable **access to embedded systems**.

Get Started with Yaler

## Makers, small business and enterprise customers rely on Yaler

Our customers use Yaler in building and home automation, environmental monitoring, tele-medicine and many other fields.

SIEMENS

PHONAK

decentLab

ZAAK  
ZURICH

### Why Yaler?

(relay spelled backwards)

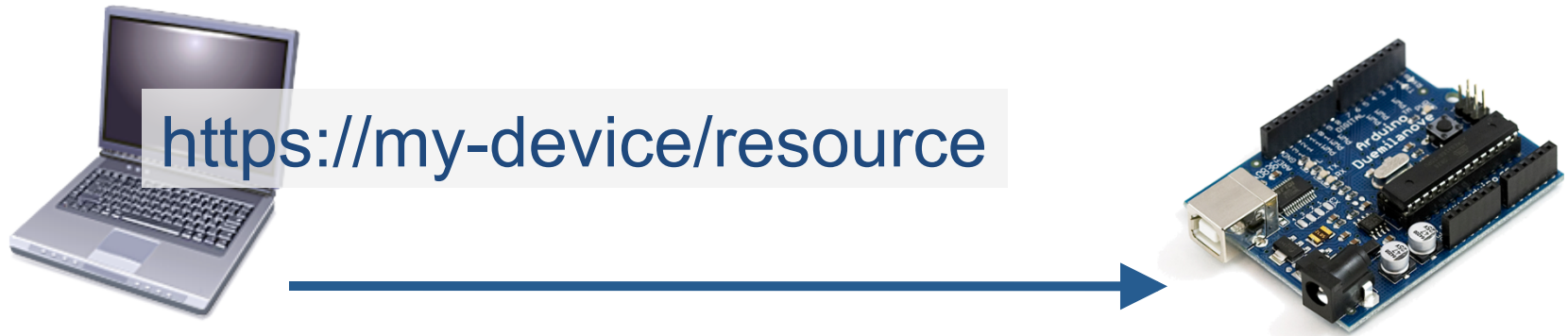
#### Connectivity as a service

Get secure Web and SSH access to your embedded systems, no matter if they're located behind a firewall, a NAT or a mobile network router. Pay-per-use, with premium enterprise support.

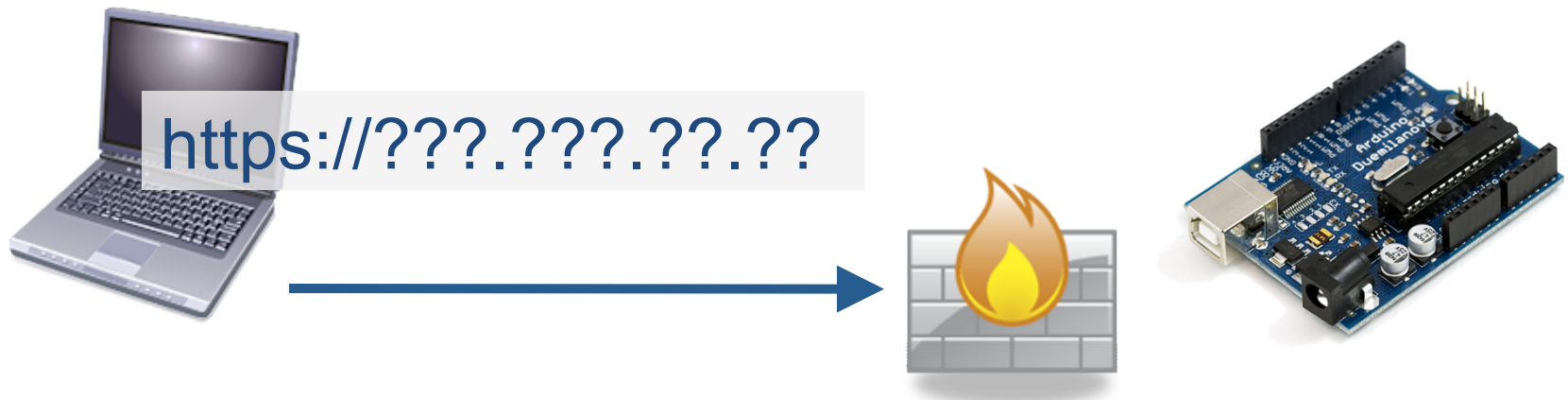
### How it works

```
graph LR; Client[Web client] --> Server[Server]; Server -- "Secure Web access to device" --> Device[Your device]
```

# Remote Access and Control

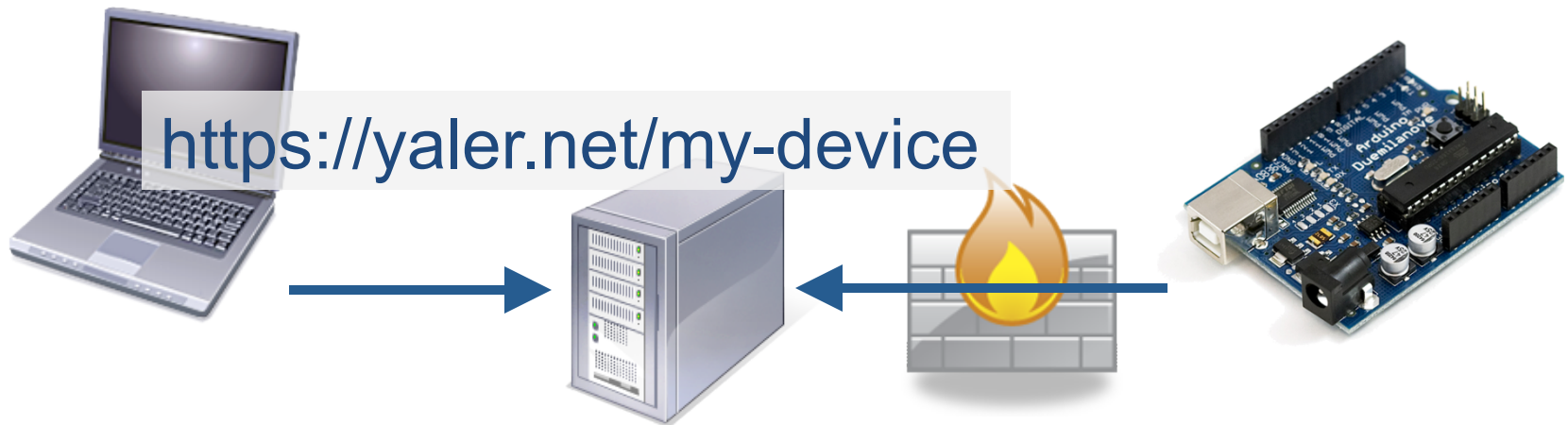


# Firewall, NAT prevents access

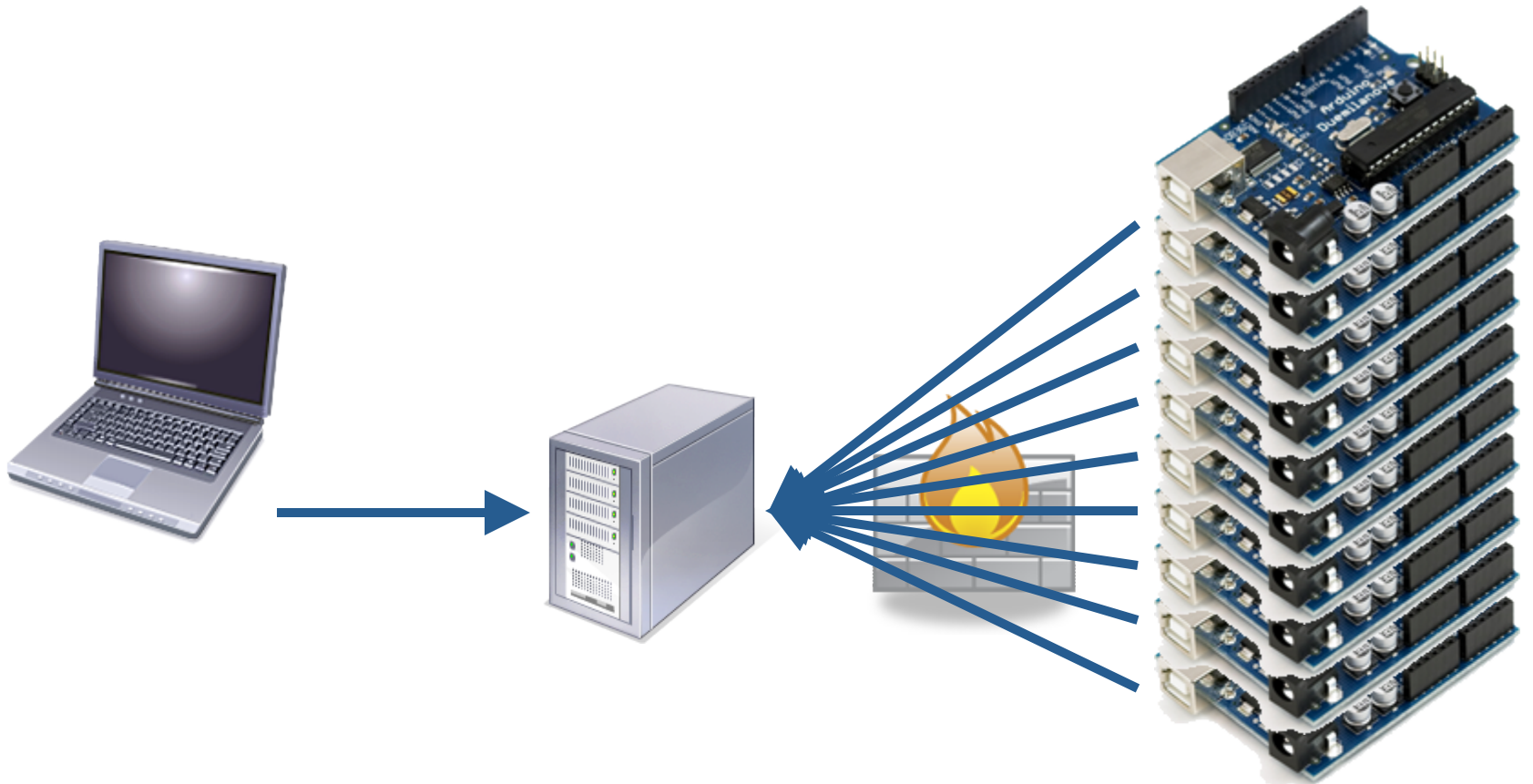




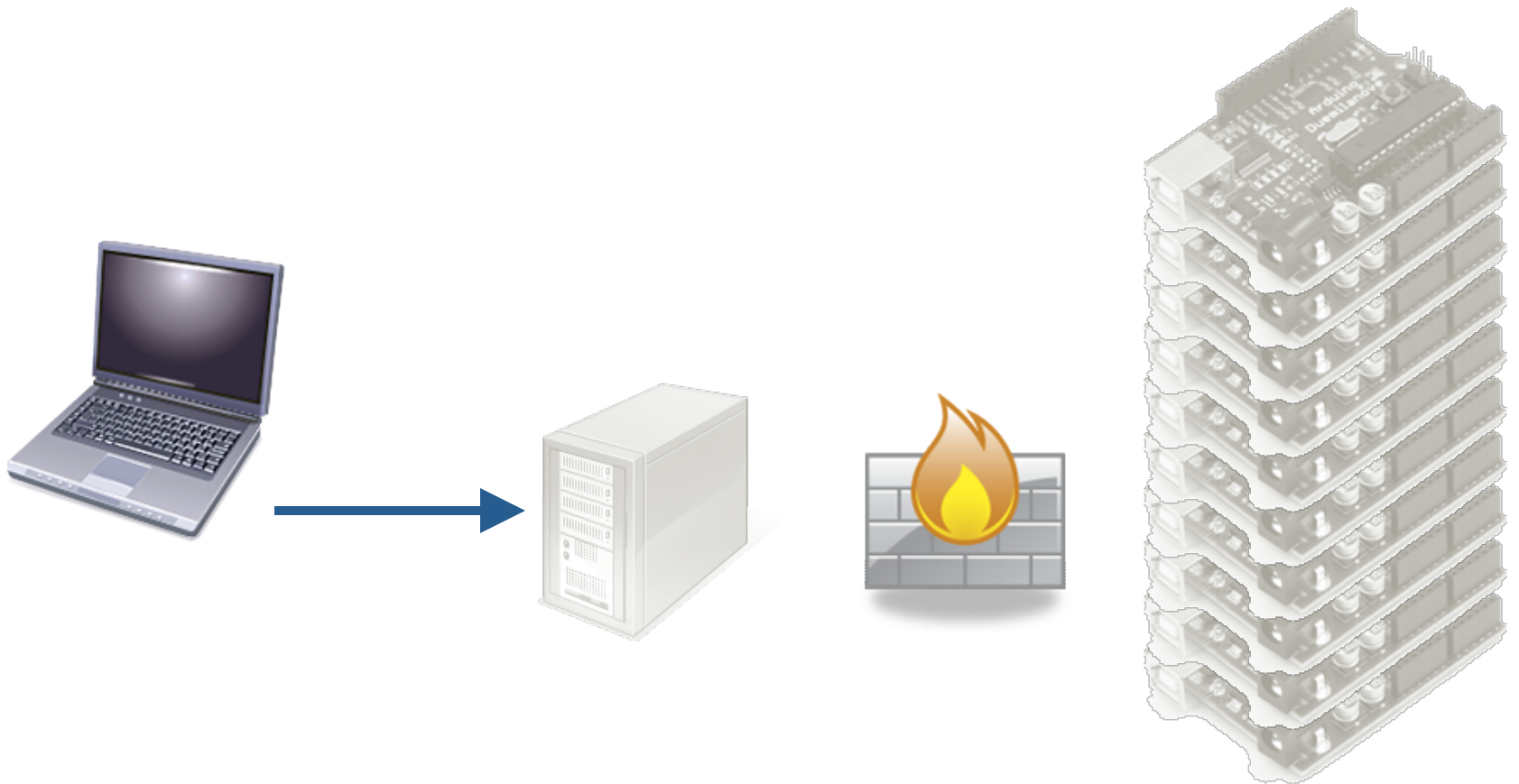
# Solution: Relay in the Cloud



# Challenge: Scalability

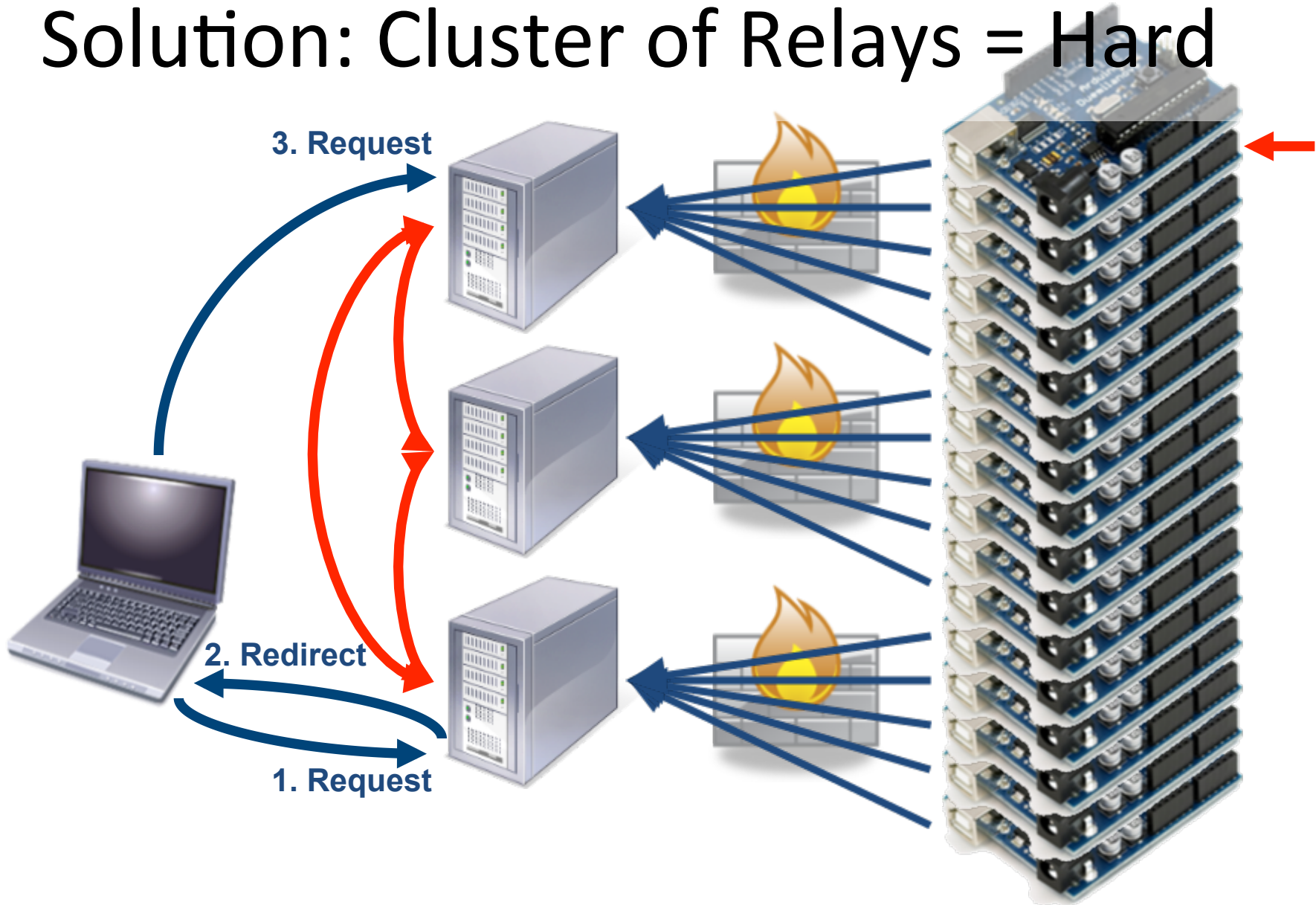


# Challenge: Availability





# Solution: Cluster of Relays = Hard



# Cloud Service + Library = Easy

Yaler.net

[Status](#)

[Docs & Help](#)

[Pricing & Sign up](#)

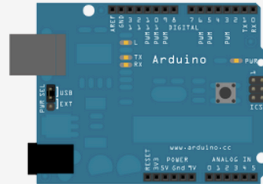
[Log in](#)

## Quick tutorials

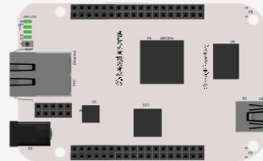
Including downloads.

### 1. Set up your device

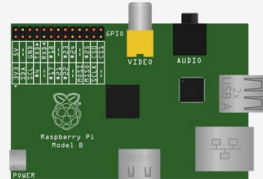
Arduino



BeagleBone



Raspberry Pi



Arduino Yún

Intel Edison

### 2. Access your device from a client

Browser (Chrome, Firefox, IE, Safari or any other)

Android

Curl

FileZilla

iOS

Putty

SFTP

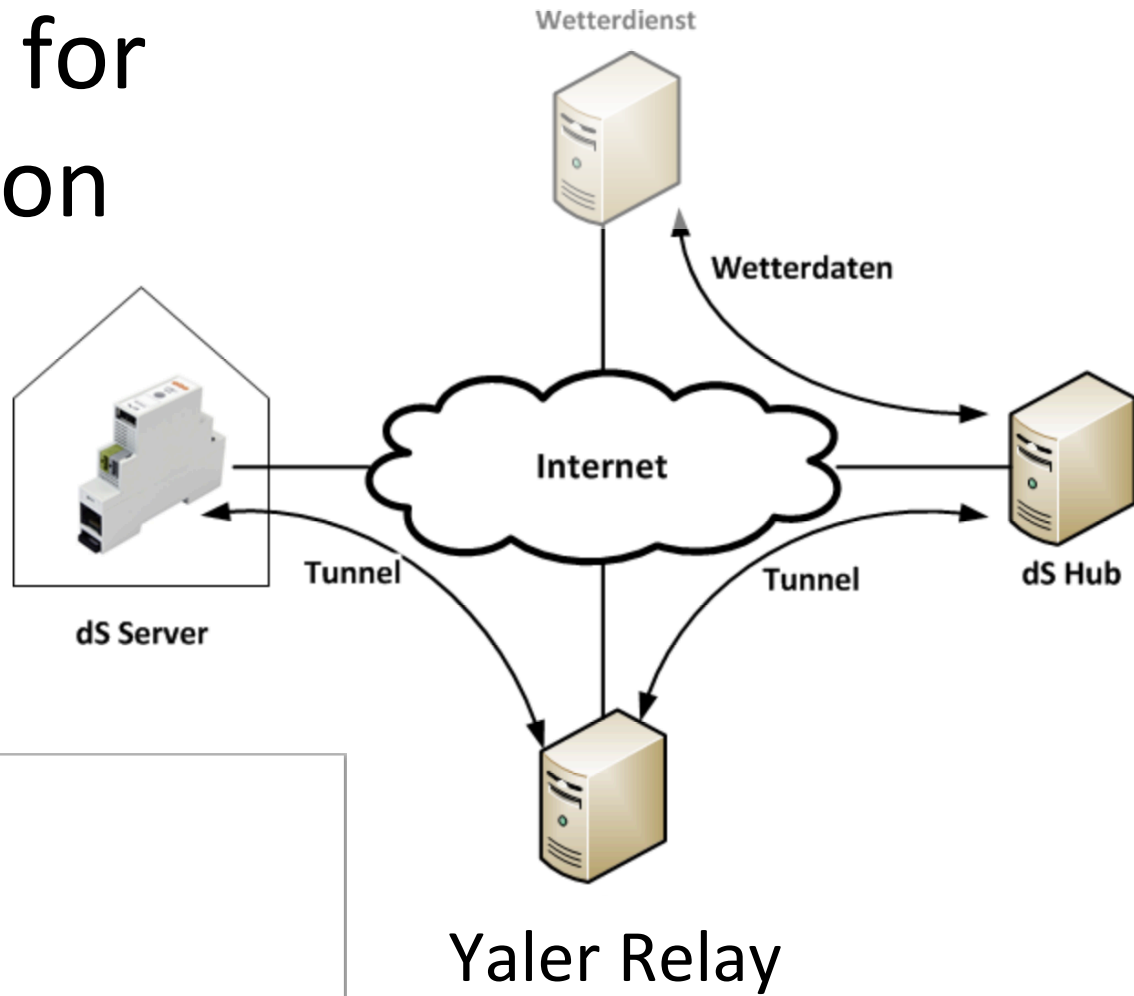
SSH

VNC

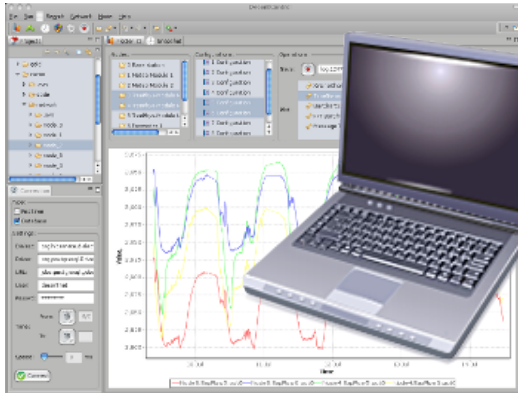
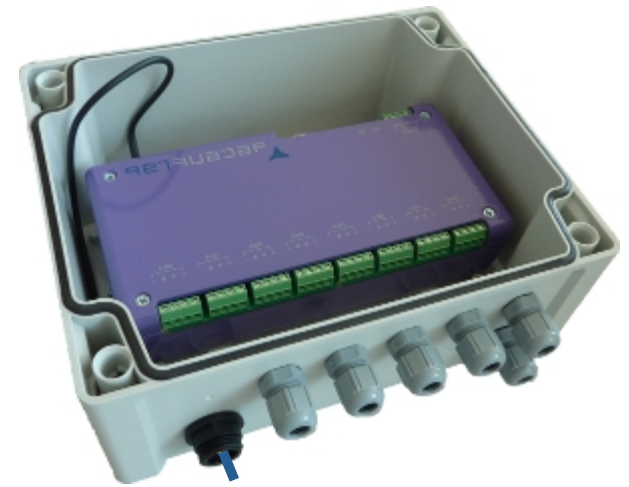
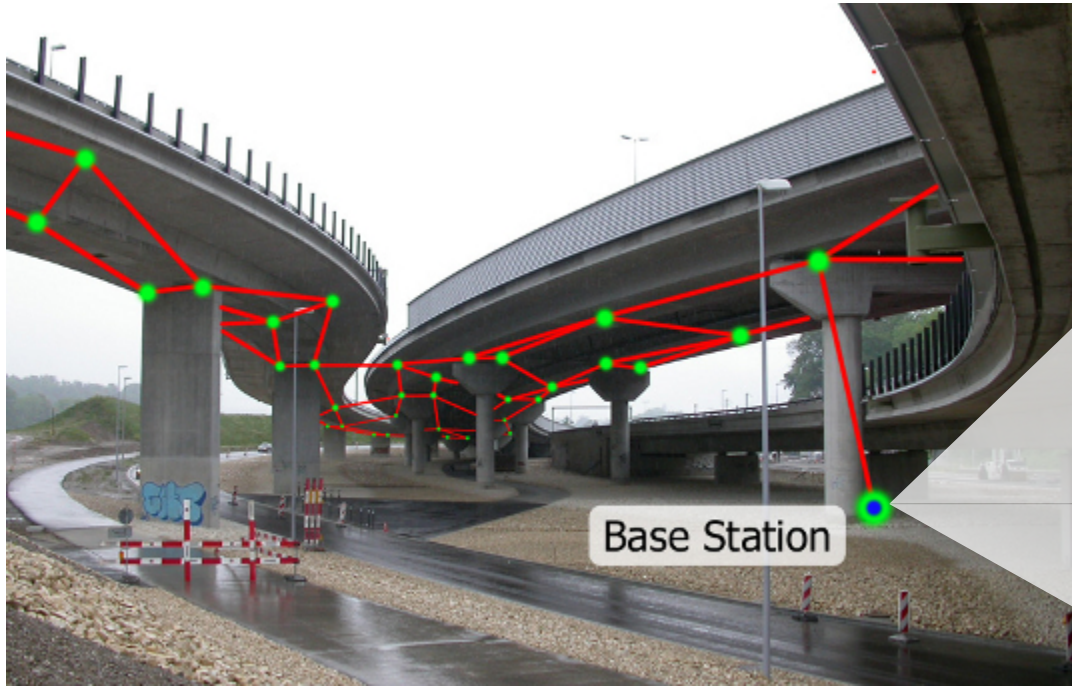
WinSCP

Other Client

# Remote Control for Home Automation



# Remote Configuration of Wireless Sensor Networks



Yaler Relay

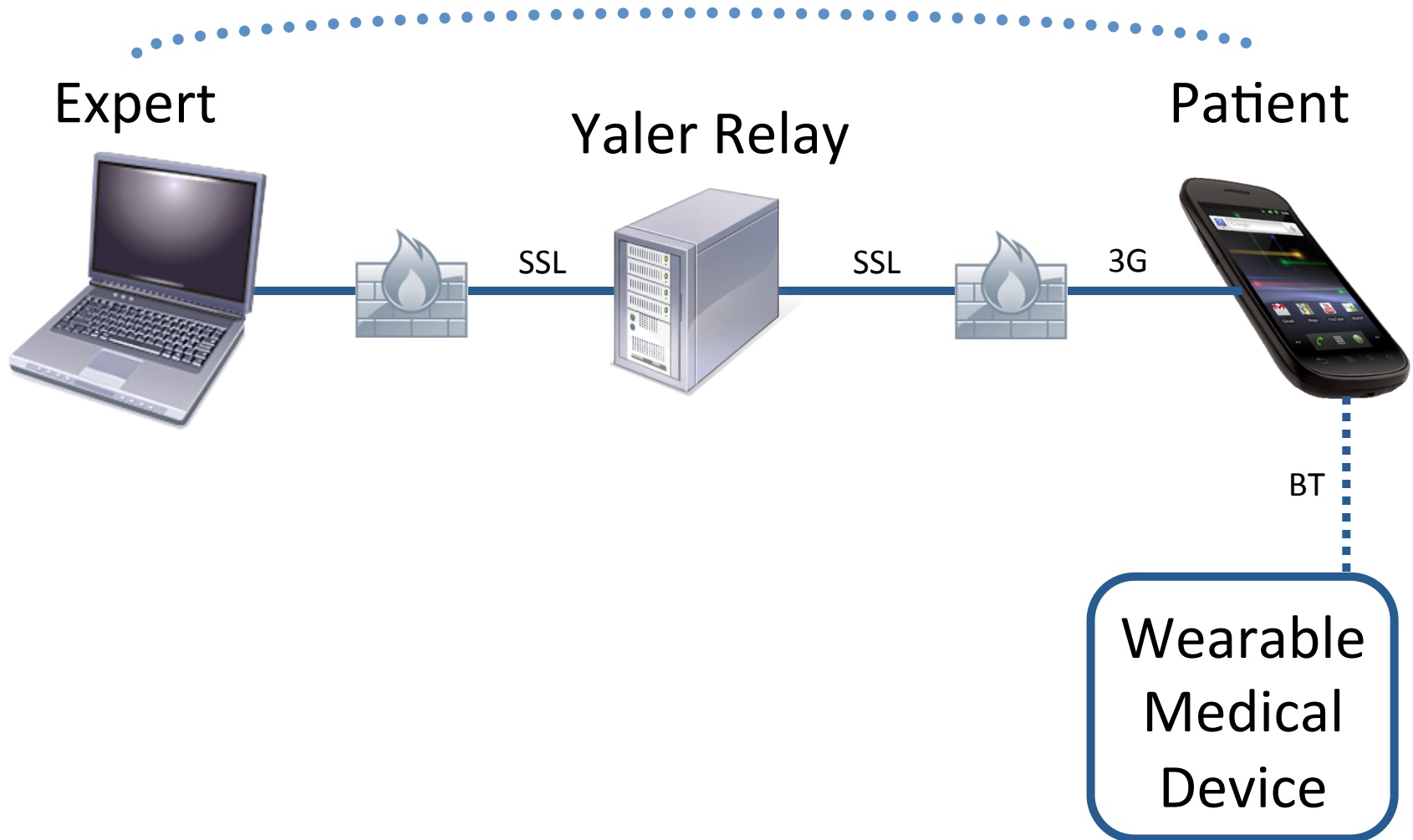


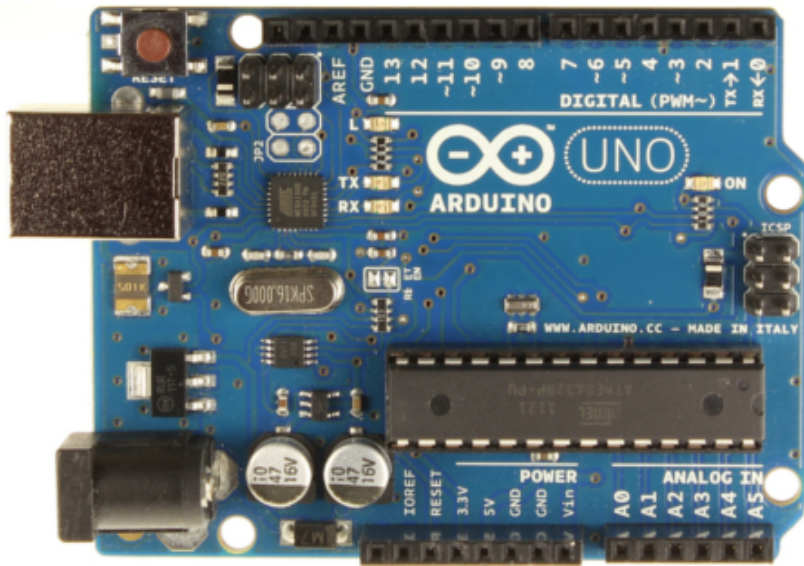
GPRS



# Ad-hoc P2P Connectivity for Telemedicine

Voice

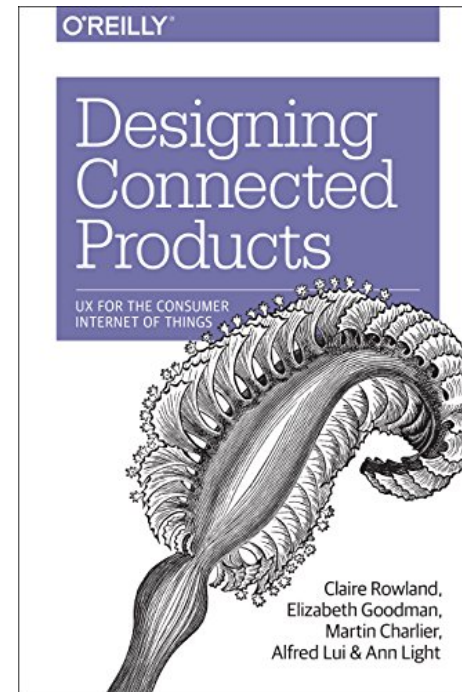
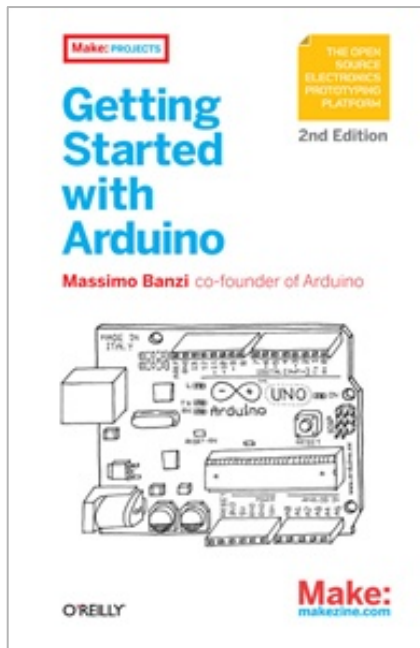




[arduino.cc](http://arduino.cc)

[learn.adafruit.com](http://learn.adafruit.com)

[meetup.com/loT-Zurich](http://meetup.com/loT-Zurich)



Thanks.

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