

Securing the IoT

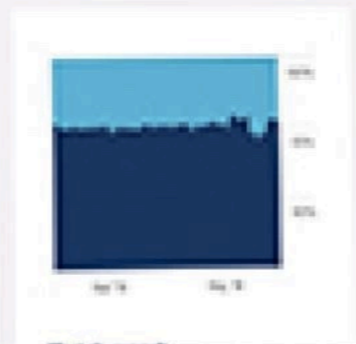
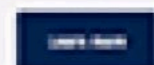
Elmer Lastdrager 30 May 2024





.nl stats and data

This site provides current statistics and forecasts about the use of the .nl domain, which is managed by SIDN. With over 3.8 million registered domain names, it is the 10th largest TLD in the world.



Stichting Internet Domeinregistratie Nederland (SIDN)

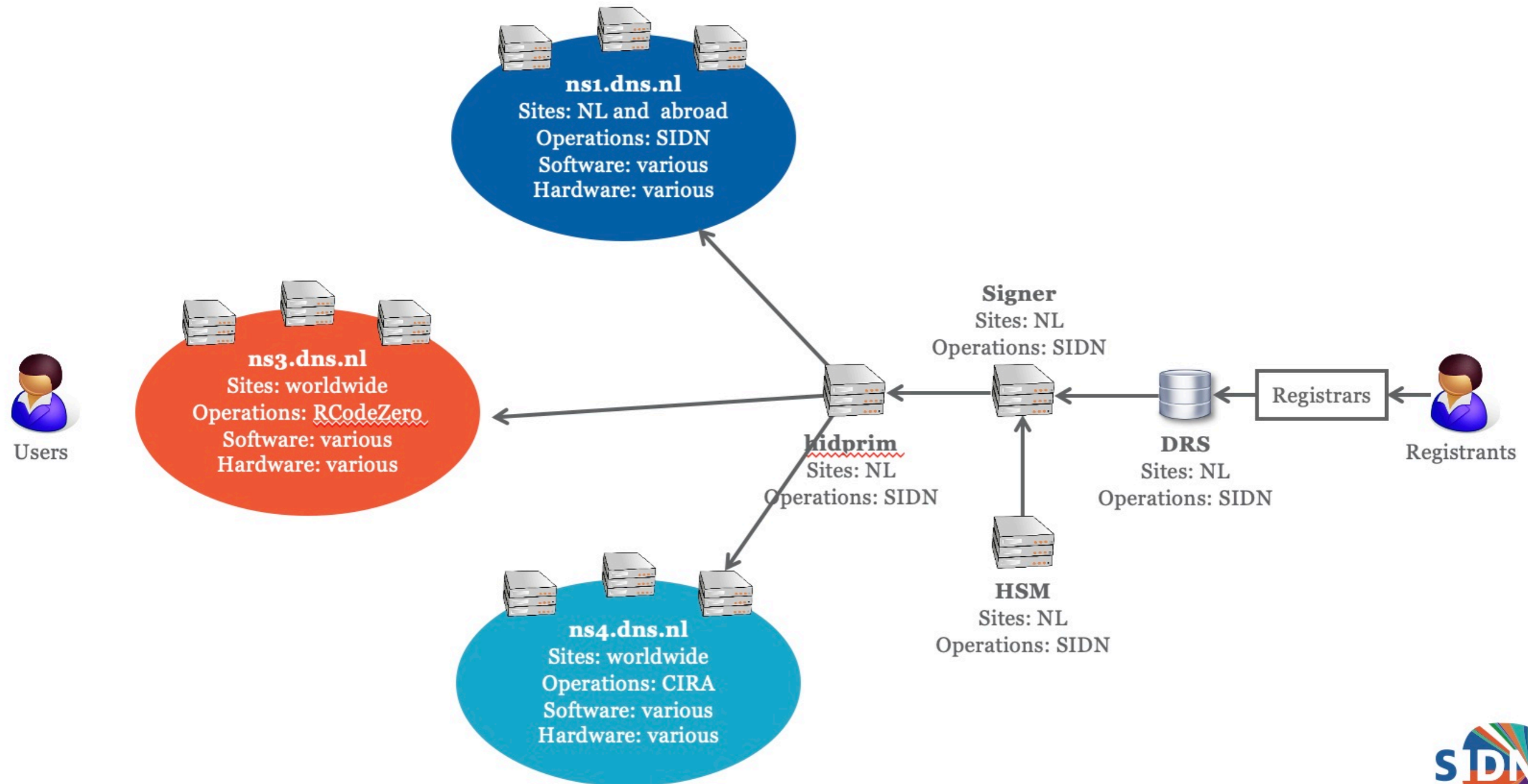
- Objective: increase society's confidence in the Internet
- Provide secure and fault-tolerant registry services for .nl
 - Anycasted DNS services with DNSSEC support
 - Registration and domain protection services
- Increase the value of the Internet in the Netherlands and elsewhere
 - Enable safe and novel uses (SIDN Fonds, IRMA)
 - Increase infrastructure security and trustworthiness (SIDN Labs)
- Private organization with a public role based in Arnhem



.nl = the Netherlands
17M inhabitants
6.2M domain names
3.8M DNSSEC-signed
4.0B DNS queries/day
8.6B NTP queries/day



Heterogeneous and fault-tolerant DNS infrastructure



SIDN Labs



SIDN Labs
Maarten Wullink
Research engineer



SIDN Labs
Thymen Wabeke
Research engineer



SIDN Labs
Moritz Müller
Research engineer



SIDN Labs
Elmer Lastdrager
Research engineer



SIDN Labs
Thijs van den Hout
Research Engineer



SIDN Labs
Ralph Koning
Research Engineer



SIDN Labs
Caspar Schutijser
Research engineer



SIDN Labs
Cristian Hesselman
Directeur SIDN Labs



SIDN Labs
Giovane Moura
Data Scientist



SIDN Labs
Marco Davids
Research engineer

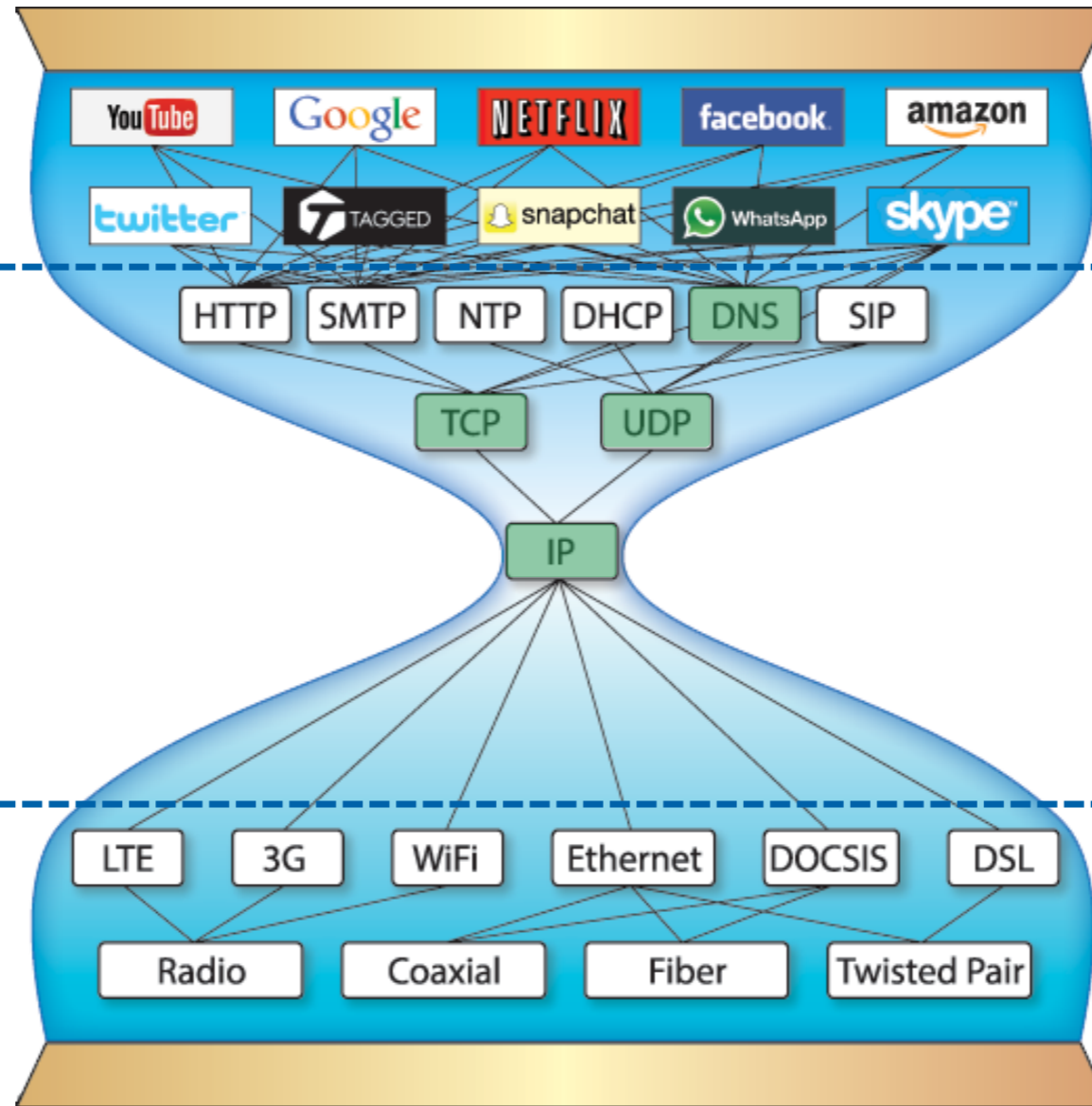
- Technical experts, divers in seniority and nationality
- Help SIDN teams, write open-source software, analyze large amounts of data, conduct experiments, write articles, collaborate with universities
- M.Sc students help us advance specific areas

Most people

Services

Us

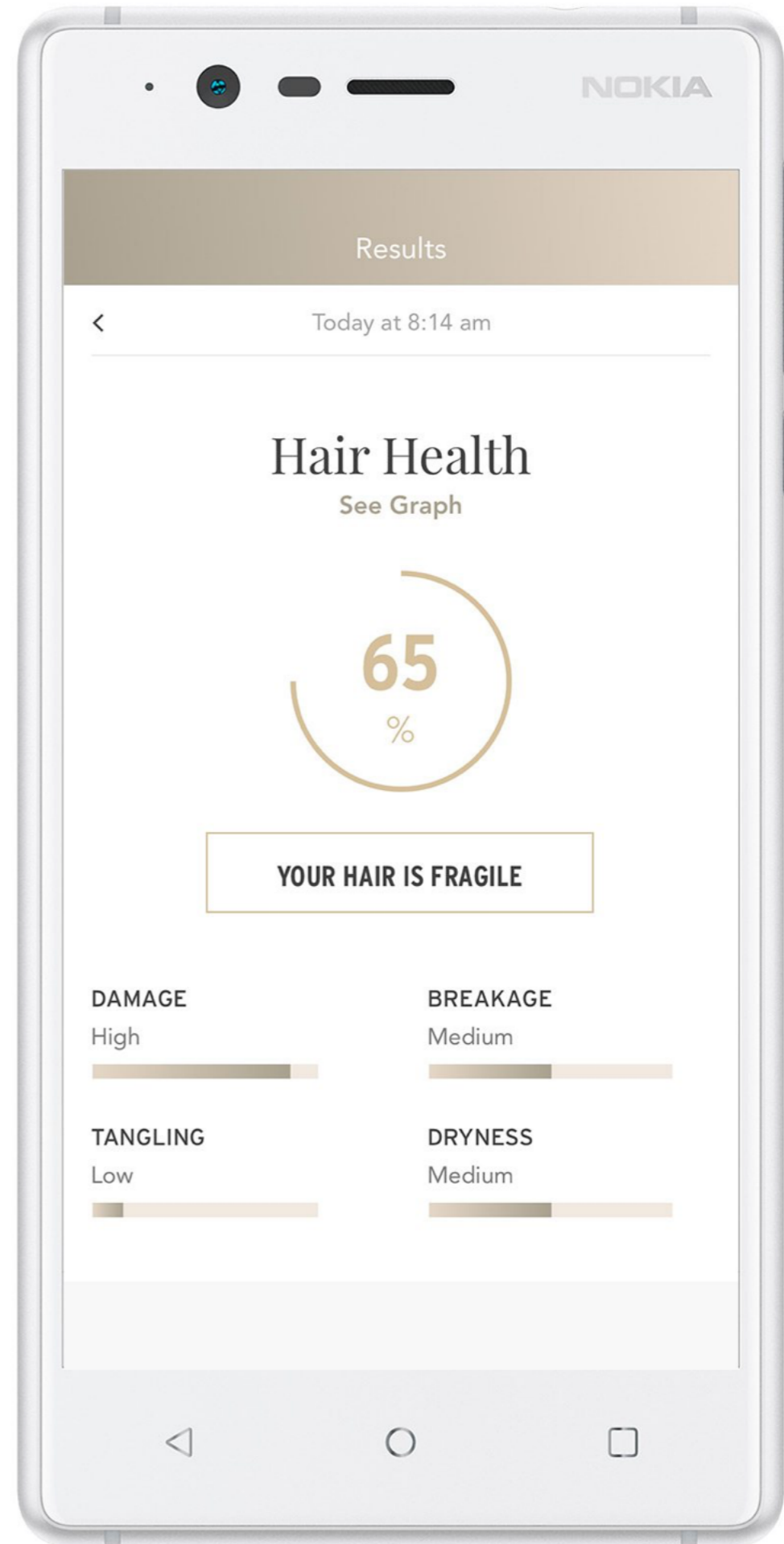
Transmission





Internet of Things









Como Huggies TweetPee funciona

Design ergonômico

O design busca o conforto e segurança do bebê. Fácil de instalar e retirar para utilizar na próxima fralda.



O sensor da fralda monitora a umidade e envia um sinal quando o bebê faz xixi



Todos que têm a permissão para acompanhar a atividade do bebê são notificados



Através do APP mães e papais conseguem comprar fraldas sem sair de casa.

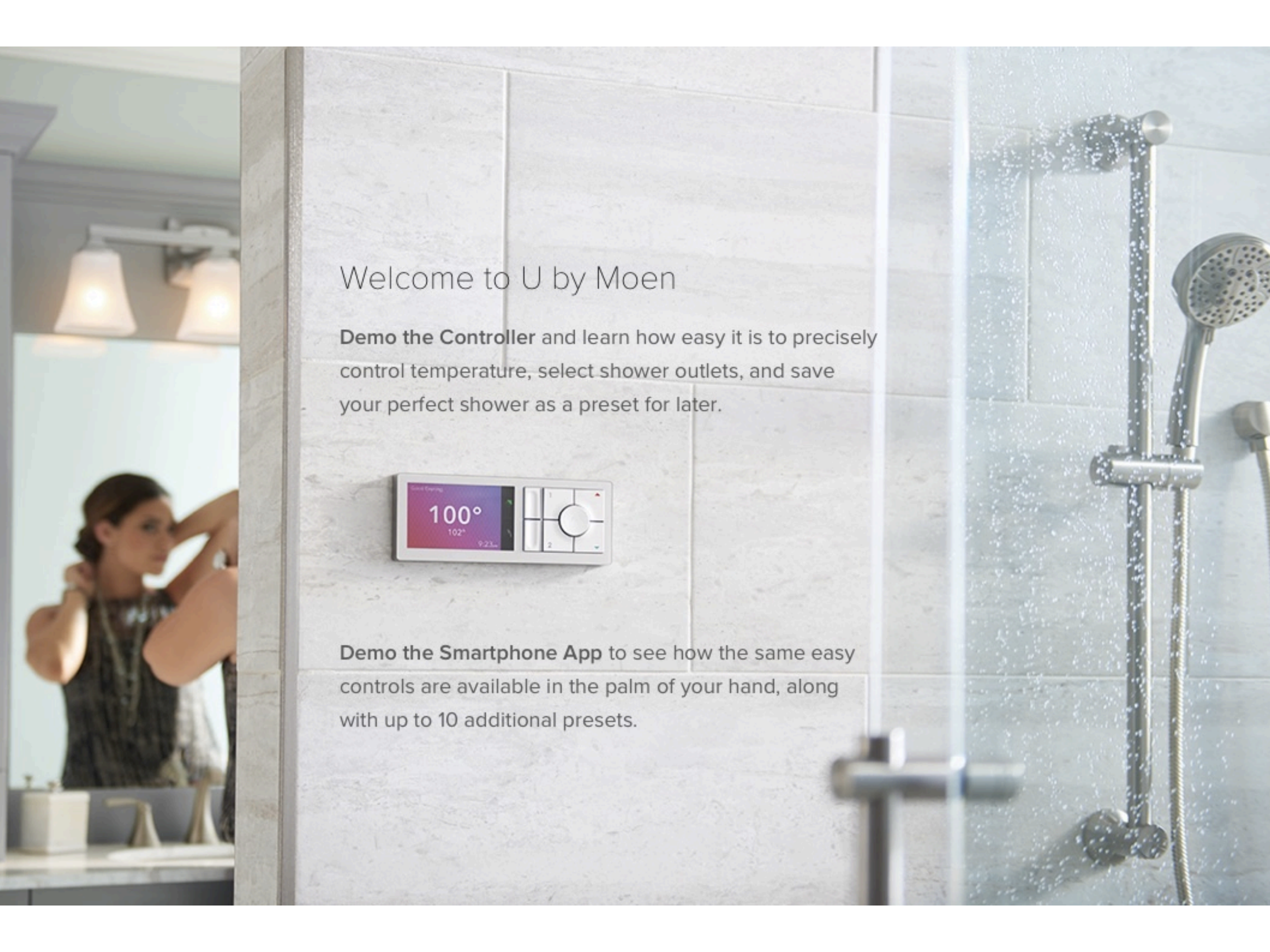


Conheça TweetPee

Como funciona

Pelo histórico de troca de fraldas do bebê, você acompanha a quantidade usada por dia



A woman in a dark sleeveless top is looking into a large mirror in a bathroom. The mirror reflects her and two lit vanity lights. In the foreground, a Moen U by Moen shower controller is mounted on a light-colored stone wall. The controller has a digital display showing '100°' and '102°' and a control knob with '1' and '2' settings. To the right, a shower glass door is visible with a showerhead and a vertical bar.

Welcome to U by Moen

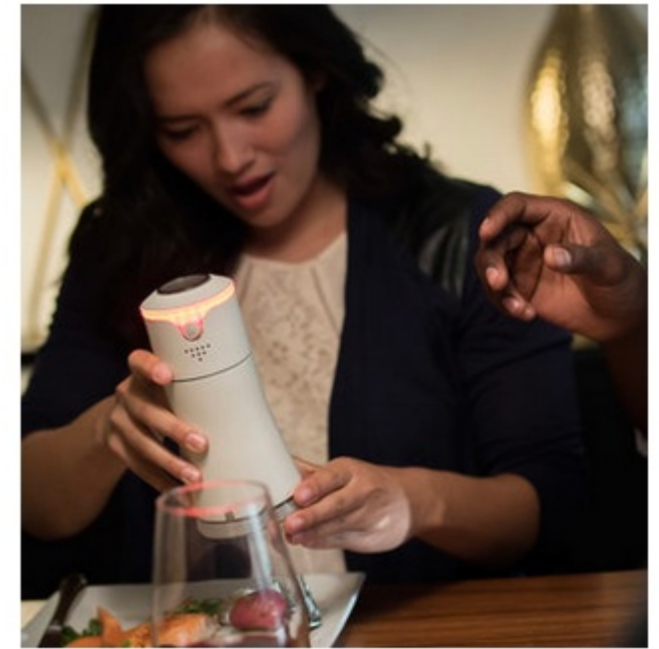
Demo the Controller and learn how easy it is to precisely control temperature, select shower outlets, and save your perfect shower as a preset for later.

Demo the Smartphone App to see how the same easy controls are available in the palm of your hand, along with up to 10 additional presets.



SMALT with voice

Connect SMALT with Amazon Echo and simply say "Alexa, dispense half a teaspoon of salt".



Bring the flavor

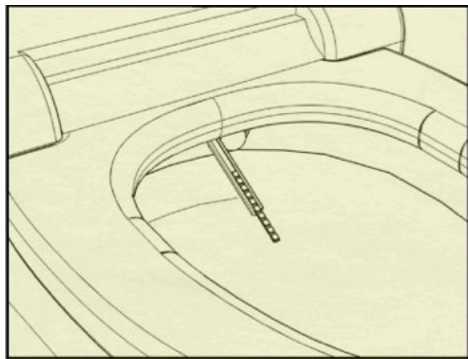
SMALT dispenses salt with a shake/pinch of your smartphone screen or simply turning the dial manually.

What does i.Con do with its data? Can I use it anonymously?

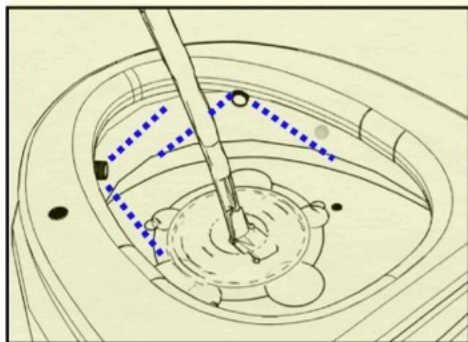
“Absolutely! All data will be kept anonymous but users will have the option to share their recent data with friends, or, indeed the world. You will be able to anonymously access stats that you can compare with i.Con users worldwide.”



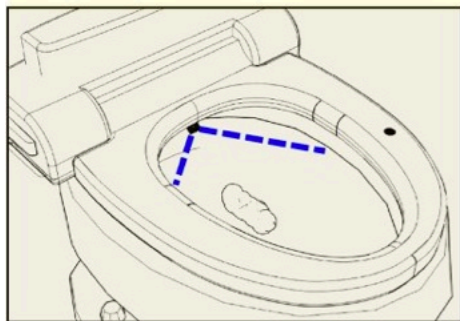




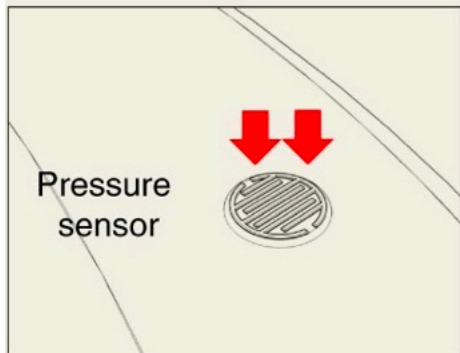
Urinalysis



Uroflowmetry



Bristol stool form scale

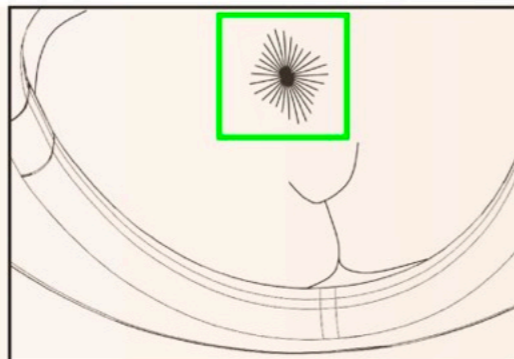


Pressure sensor

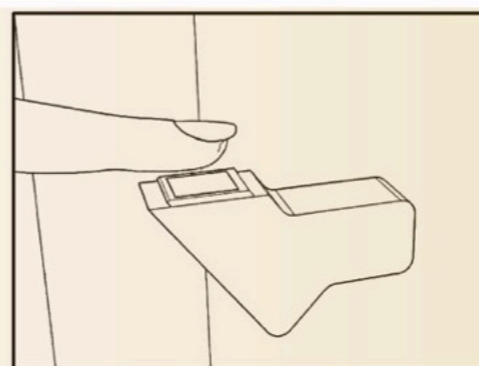
Seating time
defecation time

- (i) Pressure sensor
- (ii) Motion sensor (PIR)
- (iii) Urinalysis strip

- (iv) Stool camera
- (v) Anus camera
- (vi) Uroflow camera



Analprint scan



Fingerprint scan



Cloud-based
health portal

YOU GET CONNECTED!

AND YOU GET CONNECTED!

EVERYTHING GETS CONNECTED!

[Home](#) > [Data Protection](#) > [Internet of Things](#)

SLIDESHOW

The internet of insecure things: Thousands of internet-connected devices are a security disaster in the making



By [Josh Fruhlinger](#), CSO | Oct 12, 2016 4:00 AM PT



The "S" in IoT
stands for
SECURITY

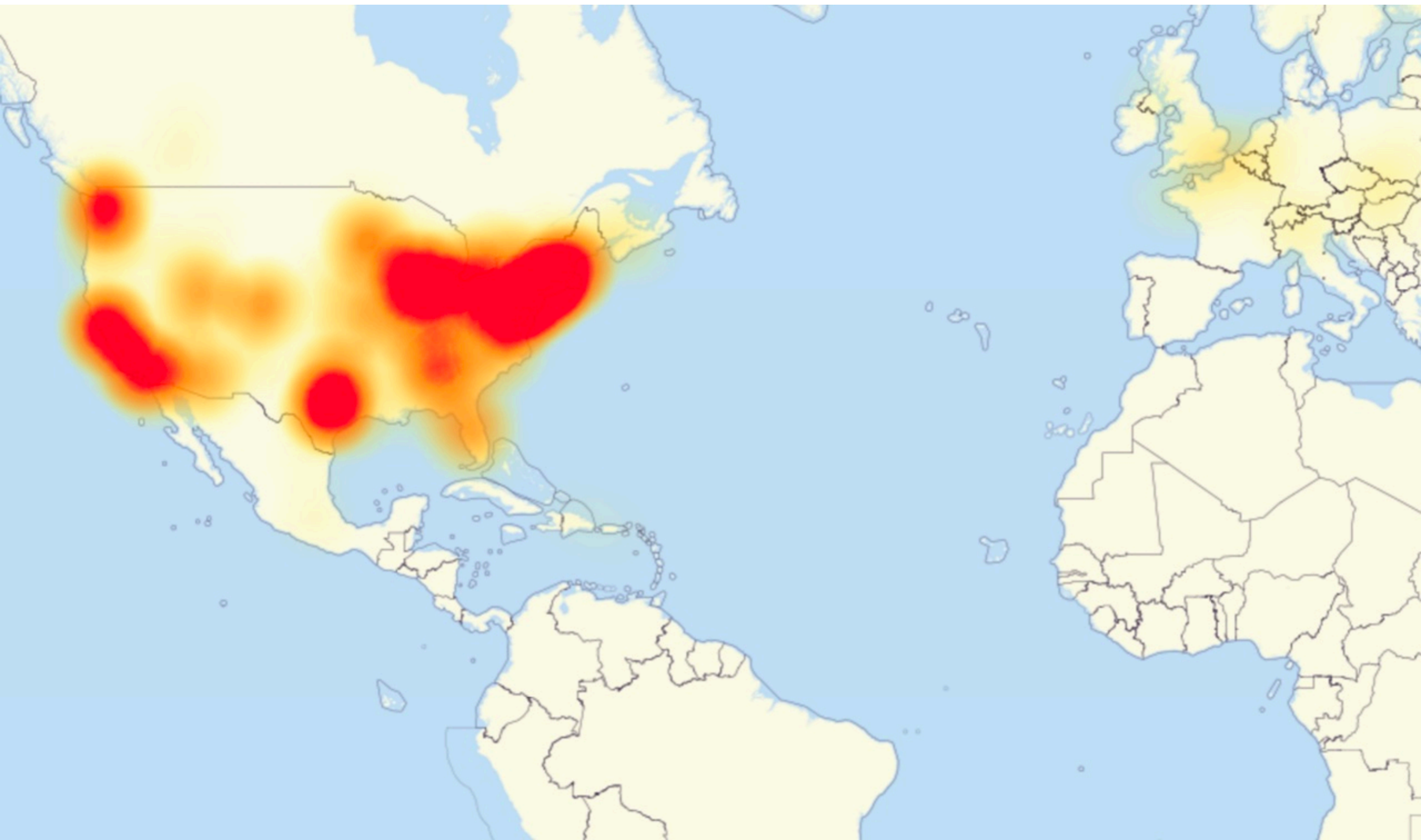




Mirai vs DynSM

1.2 Tbps

From 'only' 100.000 devices



This guy's light bulb performed a DoS attack on his entire smart house



Kashmir Hill

3/03/15 9:41am · Filed to: REAL FUTURE ▾



182



RISK ASSESSMENT —

BrickerBot, the permanent denial-of-service botnet, is back with a vengeance

New botnet squadrons wage fiercer, more intense attacks on unsecured IoT devices.

DAN GOODIN - 4/24/2017, 10:43 PM



Home > Security > Cybercrime & Hacking



SECURITY IS SEXY

By Darlene Storm, Computerworld | FEB 2, 2015 12:09 PM PT

About

Most security news is about insecurity, hacking and cyber threats, bordering on scary. But when security is done right, it's a beautiful thing...sexy even. Security IS sexy.

NEWS ANALYSIS

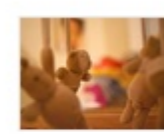
Hacker hijacks wireless Foscam baby monitor, talks and freaks out nanny

This is the third time news has circulated about some jerk hijacking a wireless Foscam camera/baby monitor and made his virtual intrusion known by talking. Please change the default password!



MORE LIKE THIS

Hacker strikes again: Creep hijacks baby monitor to scream at infant and...



2 more wireless baby monitors hacked: Hackers remotely spied on babies and...



Eerie music coming from wireless baby cam; is it a

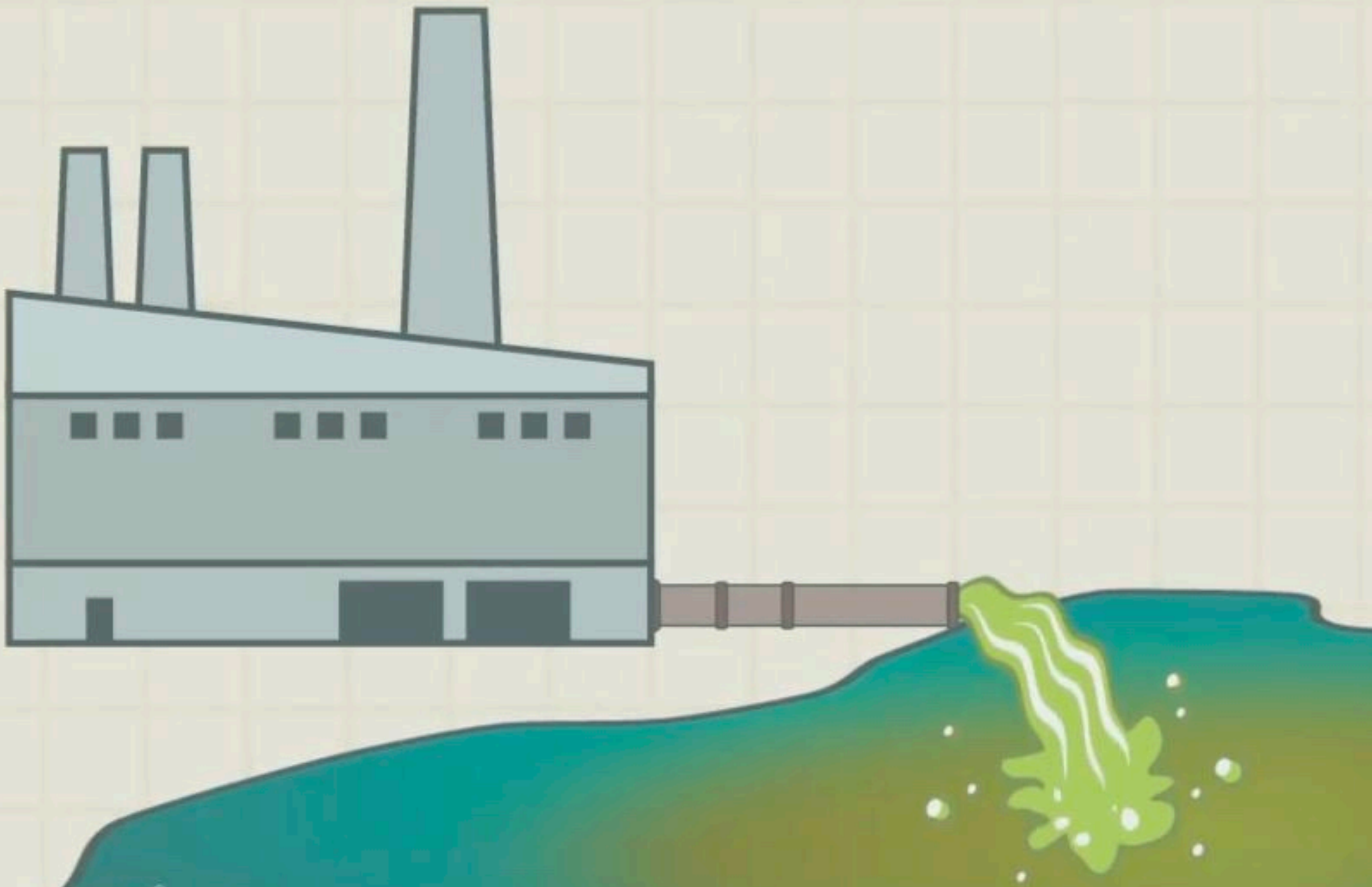


13-1
ST. JUDE MEDICAL
Sylmar, CA USA
VICTORY™ SR
5610 SSIR
S/N 1723182





NOT MY PROBLEM...





NOT MY PROBLEM...

┌ HOW LONG YOU'VE HAD YOUR SMART APPLIANCE ─┐

6 MONTHS

1 YEAR

5 YEARS

10 YEARS

BEST-CASE



YOU'RE CONSTANTLY
BEING RESCUED FROM
PERIL BY A FACELESS
TEAM OF ENGINEERS
WHO COULD WANDER
AWAY AT ANY TIME

YOUR APPLIANCE IS
PART OF A BOTNET RUN
BY ORGANIZED CRIME

WORST-CASE





IoT products required to meet minimum security standards starting 2024

🕒 2 min. read

⚡ View original

The European Commission has imposed minimum requirements for the security of IoT products, better known as smart devices, starting in 2024. If they do not meet these standards, the product will be banned from the EU market. The EU cybersecurity requirements for consumer products have been introduced as an addition to the EU Radio Equipment Directive (RED). You can read the press release from the Dutch central government [here](#).





DETECT SMOKE AND CO

CONTROL SWITCHES AND OUTLETS



CONTROL LIGHTING

CONTROL SHADES AND BLINDS



ADJUST CLIMATE

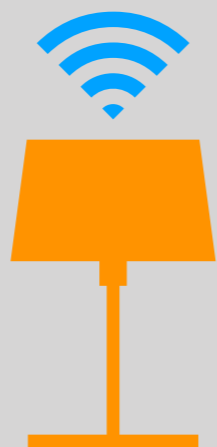
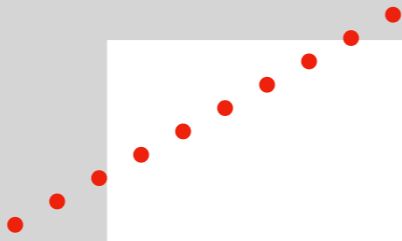
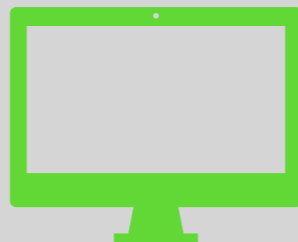
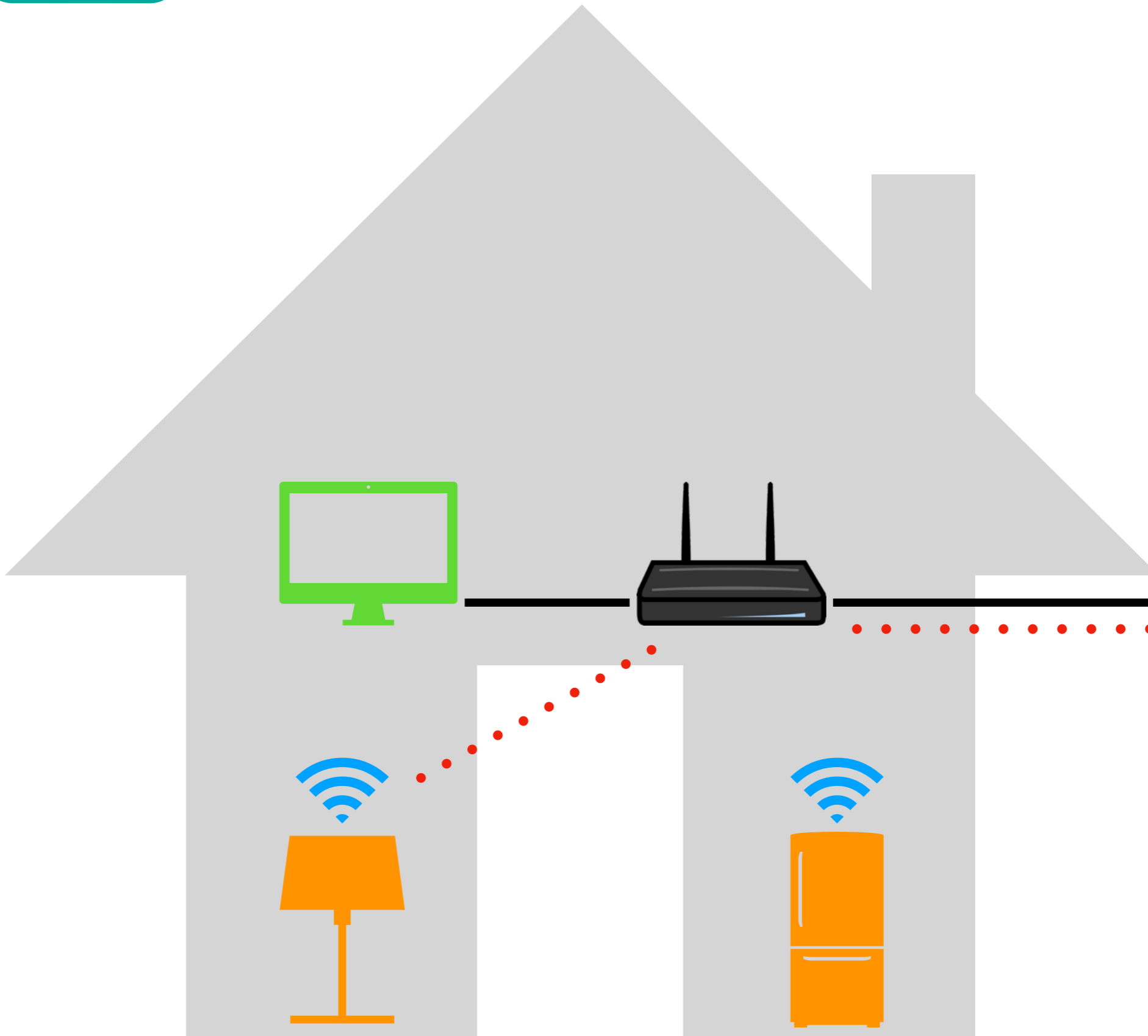
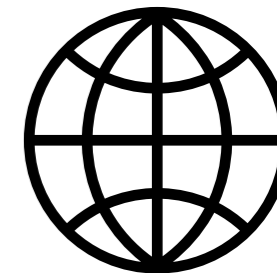
UNLOCK AND LOCK DOORS

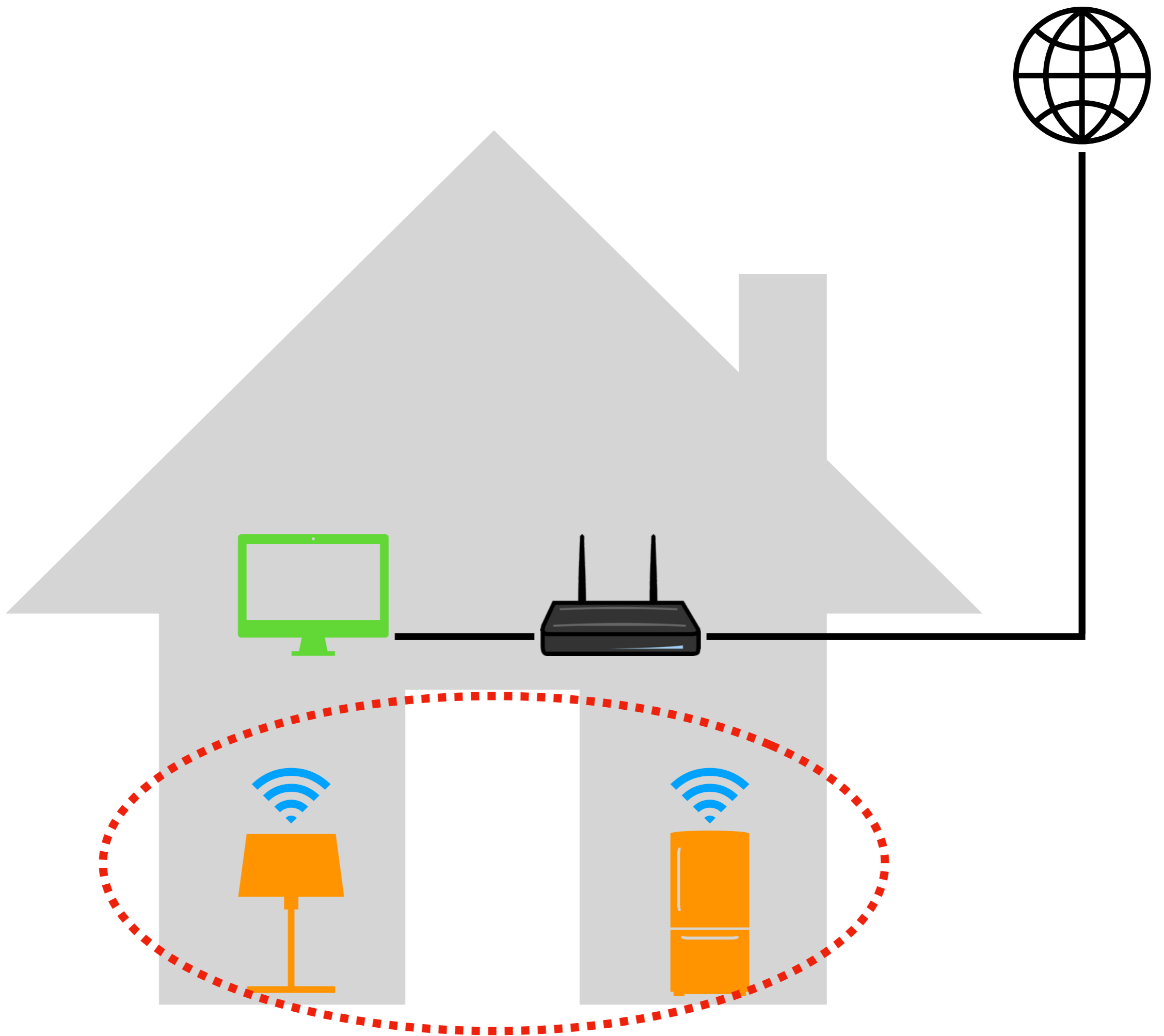


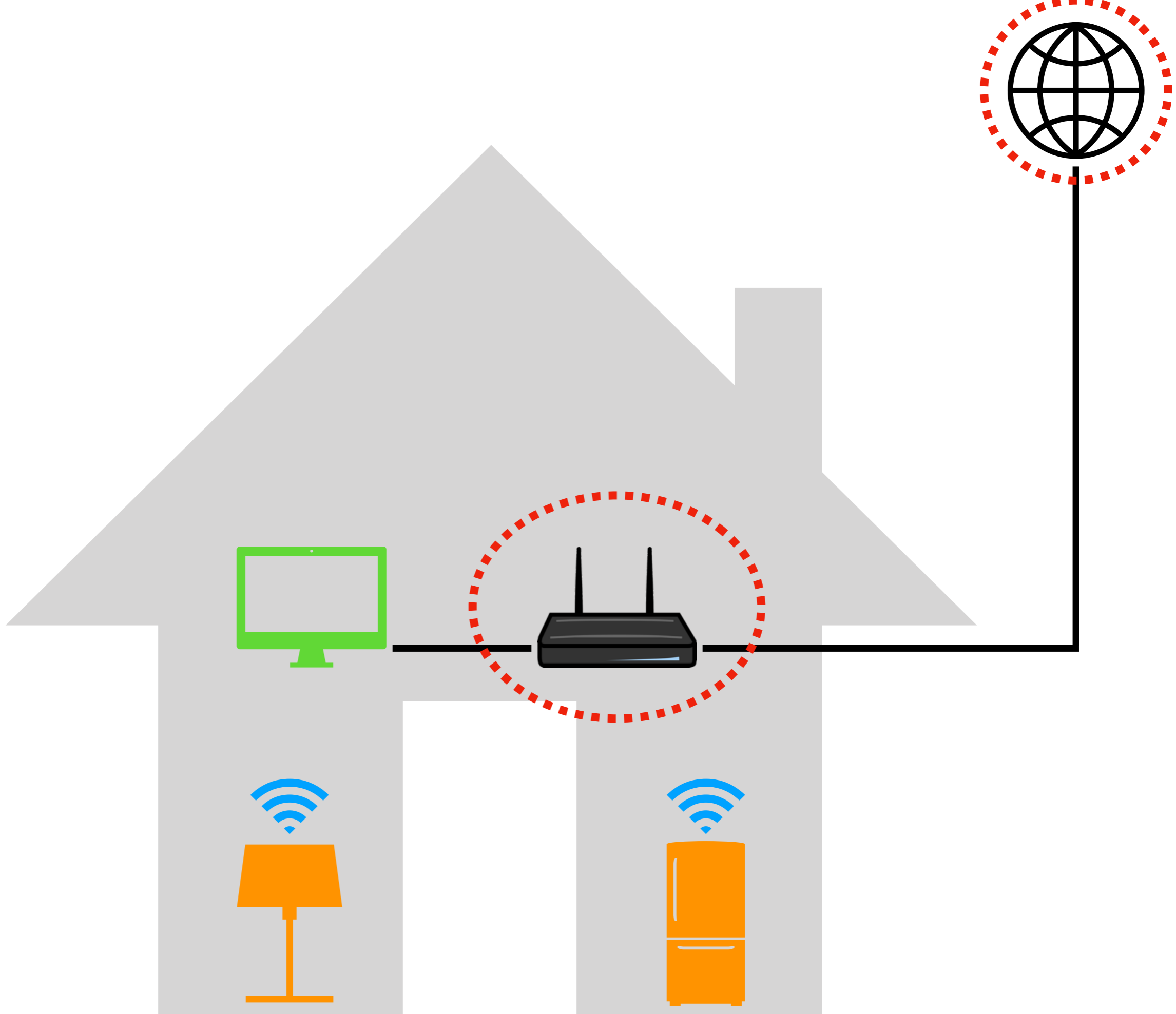
MONITOR YOUR HOME

OPEN AND CLOSE GARAGE DOORS











[[Docs](#)] [[txt](#)|[pdf](#)] [[draft-ietf-opsa...](#)] [[Tracker](#)] [[Diff1](#)] [[Diff2](#)] [[Errata](#)]

PROPOSED STANDARD

[Errata](#) [Exist](#)

Internet Engineering Task Force (IETF)

Request for Comments: 8520

Category: Standards Track

ISSN: 2070-1721

E. Lear

Cisco Systems

R. Droms

Google

D. Romascanu

March 2019

Manufacturer Usage Description Specification

Abstract

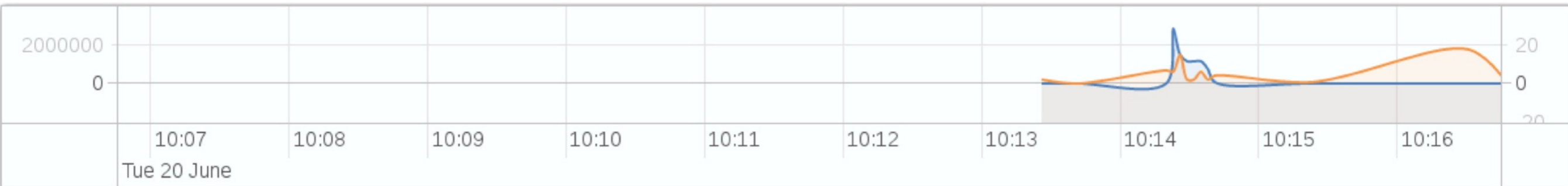
This memo specifies a component-based architecture for Manufacturer Usage Descriptions (MUDs). The goal of MUD is to provide a means for end devices to signal to the network what sort of access and network functionality they require to properly function. The initial focus is on access control. Later work can delve into other aspects.

This memo specifies two YANG modules, IPv4 and IPv6 DHCP options, a Link Layer Discovery Protocol (LLDP) TLV, a URL, an X.509 certificate extension, and a means to sign and verify the descriptions.

Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in [Section 2 of RFC 7841](#).

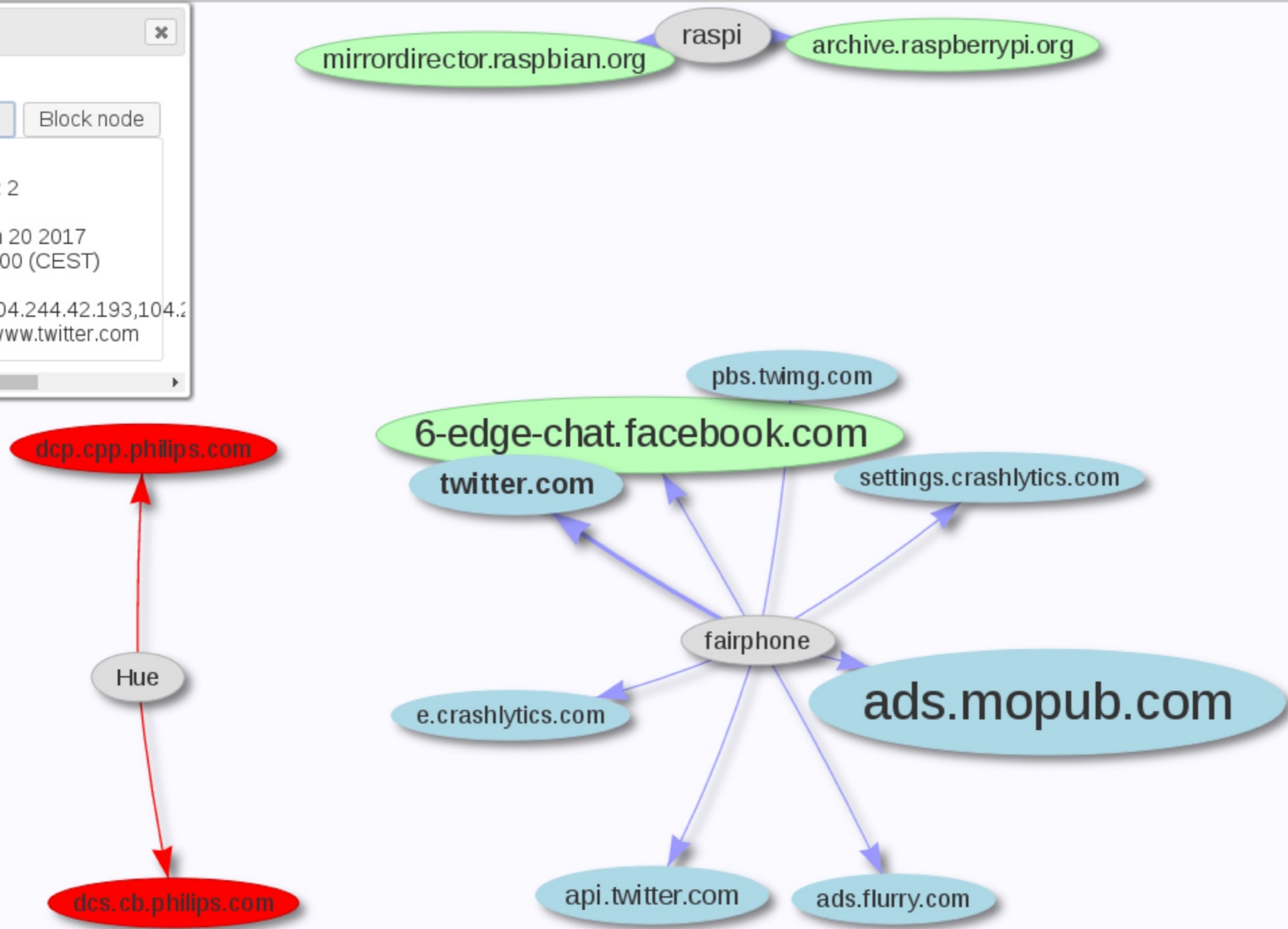


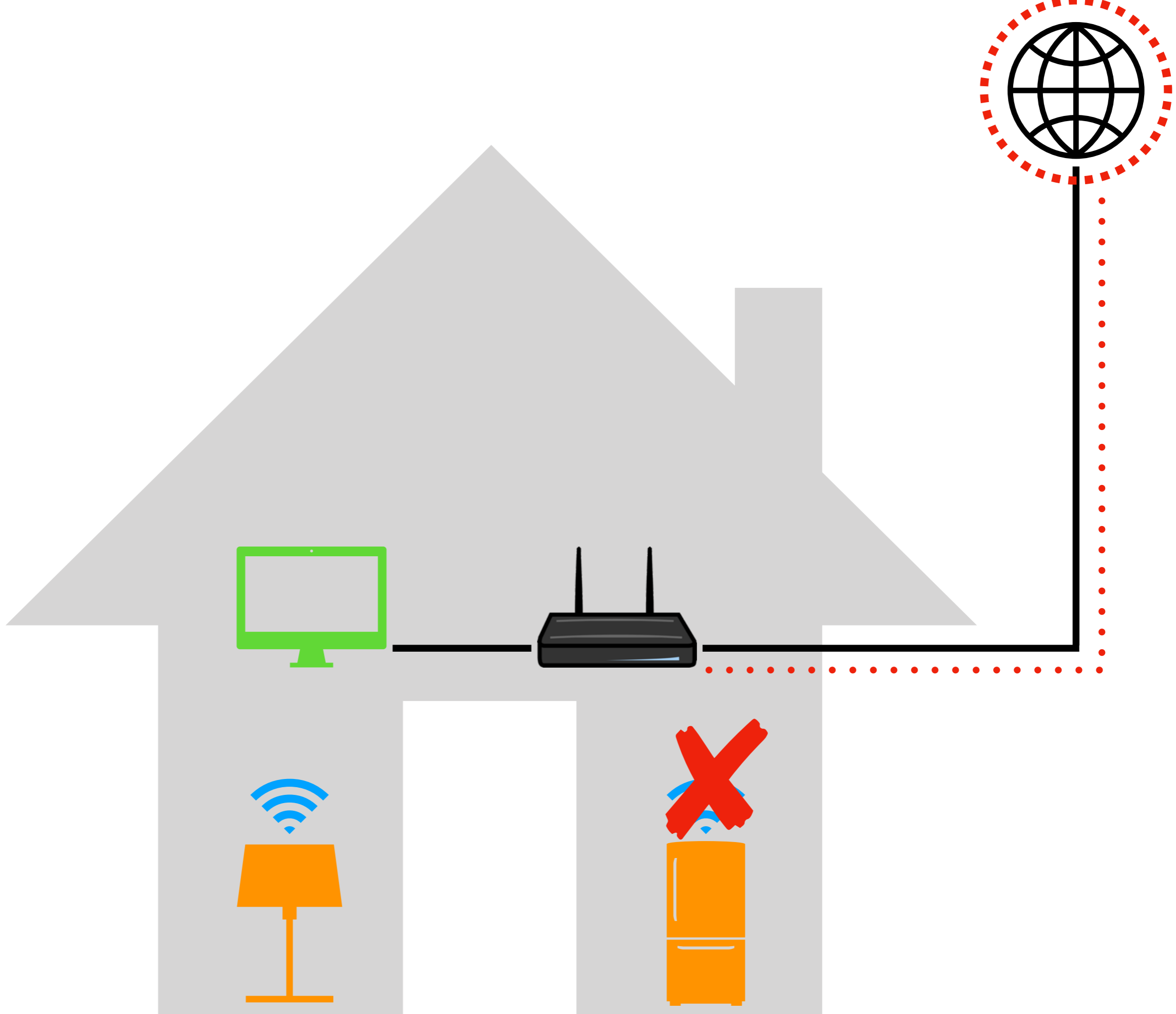
twitter.com ✕

Ignore this node

Rename this node Block node

Node: 35
 Connections seen: 2
 Traffic size: 1850
 Last seen: Tue Jun 20 2017
 10:14:35 GMT+0200 (CEST)
 IP:
 104.244.42.129,104.244.42.193,104.244.42.253
 DNS: twitter.com,www.twitter.com







CAUTION

KEEP OUT

QUARANTINE





LoRaWAN™



HOLLYWOOD

PRODUCTION

DIRECTOR

CAMERA

DATE

SCENE

TAKE





I'm watching you







ENERG



SUPPLIER'S NAME

MODEL IDENTIFIER



XYZ kWh/annum



XYZ L or m²



XY°C
XY°C



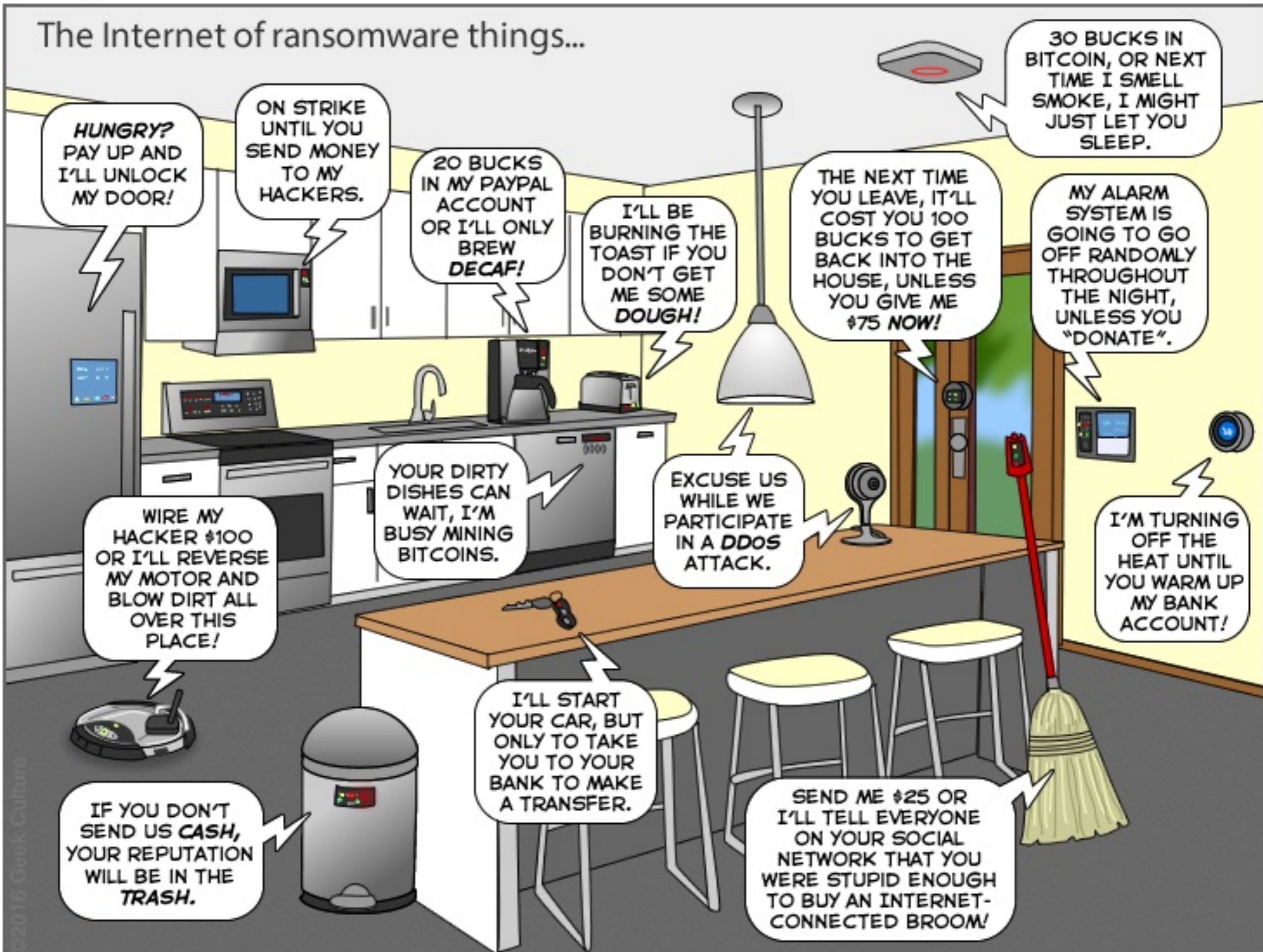
XYZ m²



XY°C
XY°C

2019/2018

The Internet of ransomware things...



HUNGRY?
PAY UP AND
I'LL UNLOCK
MY DOOR!

ON STRIKE
UNTIL YOU
SEND MONEY
TO MY
HACKERS.

20 BUCKS
IN MY PAYPAL
ACCOUNT
OR I'LL ONLY
BREW
DECAF!

I'LL BE
BURNING THE
TOAST IF YOU
DON'T GET
ME SOME
DOUGH!

THE NEXT TIME
YOU LEAVE, IT'LL
COST YOU 100
BUCKS TO GET
BACK INTO THE
HOUSE, UNLESS
YOU GIVE ME
\$75 NOW!

30 BUCKS IN
BITCOIN, OR NEXT
TIME I SMELL
SMOKE, I MIGHT
JUST LET YOU
SLEEP.

MY ALARM
SYSTEM IS
GOING TO GO
OFF RANDOMLY
THROUGHOUT
THE NIGHT,
UNLESS YOU
"DONATE".

WIRE MY
HACKER \$100
OR I'LL REVERSE
MY MOTOR AND
BLOW DIRT ALL
OVER THIS
PLACE!

YOUR DIRTY
DISHES CAN
WAIT, I'M
BUSY MINING
BITCOINS.

EXCUSE US
WHILE WE
PARTICIPATE
IN A *DDOS*
ATTACK.

I'M TURNING
OFF THE
HEAT UNTIL
YOU WARM UP
MY BANK
ACCOUNT!

IF YOU DON'T
SEND US *CASH*,
YOUR REPUTATION
WILL BE IN THE
TRASH.

I'LL START
YOUR CAR, BUT
ONLY TO TAKE
YOU TO YOUR
BANK TO MAKE
A TRANSFER.

SEND ME \$25 OR
I'LL TELL EVERYONE
ON YOUR SOCIAL
NETWORK THAT YOU
WERE STUPID ENOUGH
TO BUY AN INTERNET-
CONNECTED BROOM!

Q&A

<https://spin.sidnlabs.nl>

<https://github.com/sidn/spin>

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