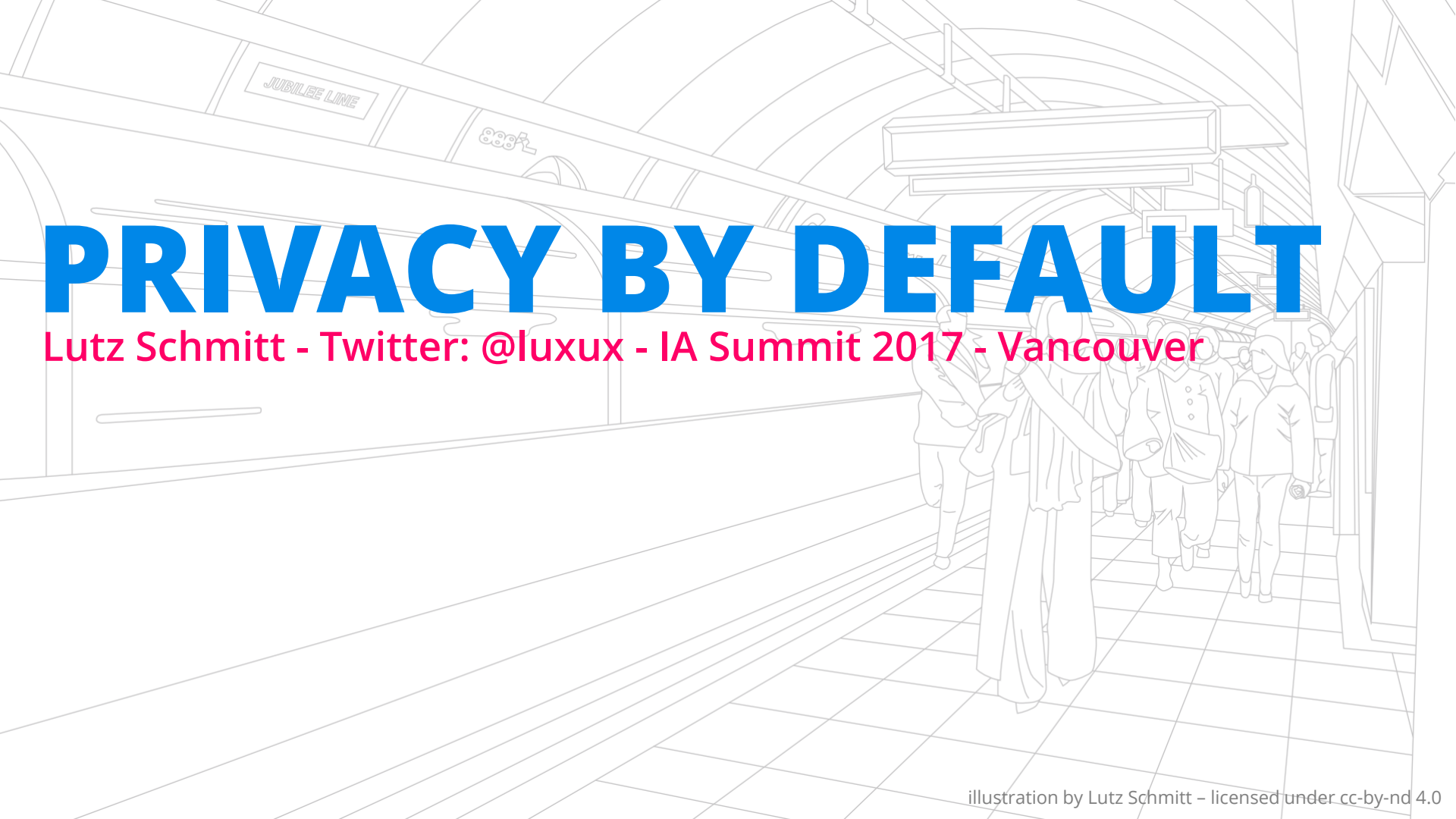
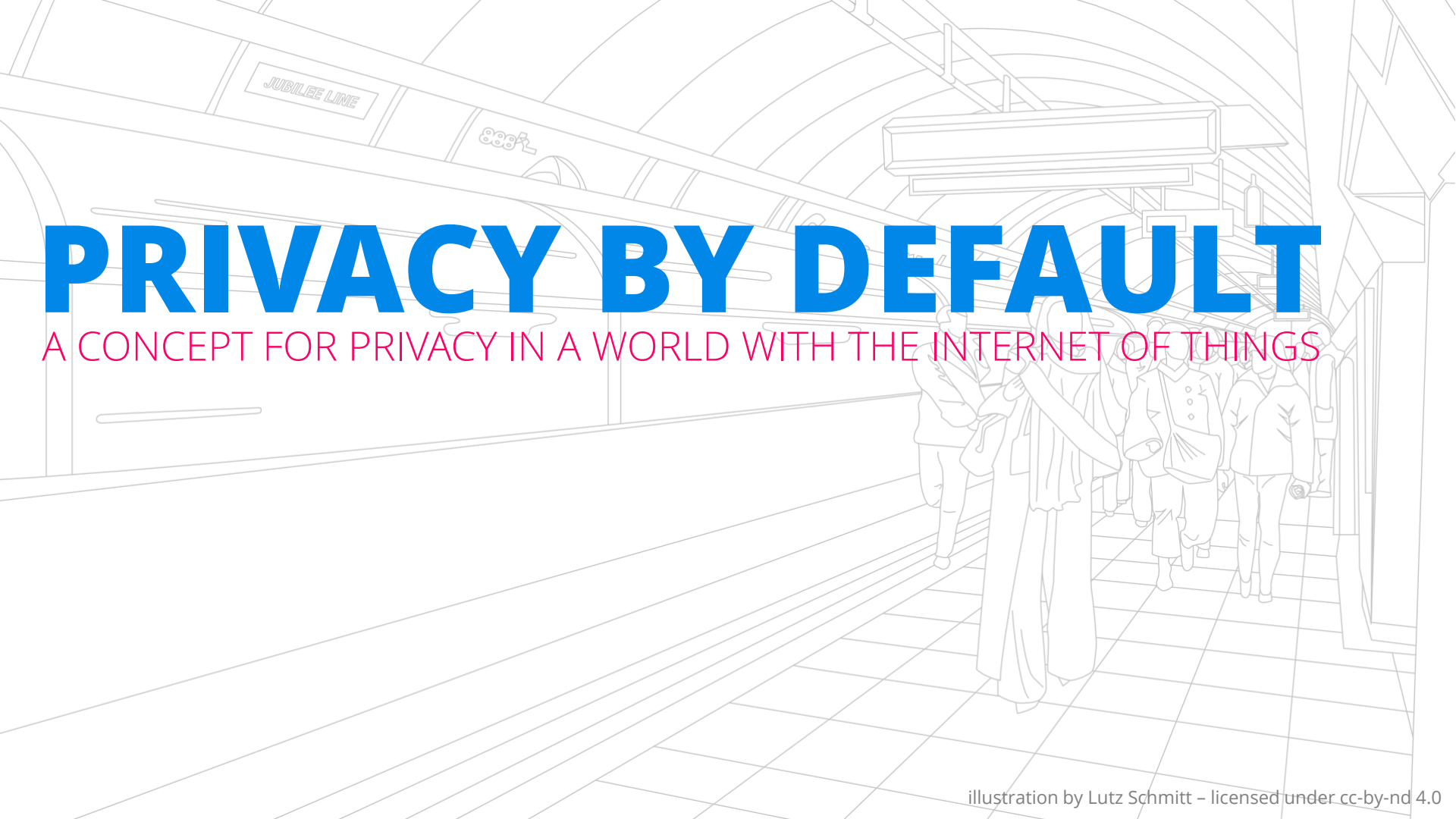


PRIVACY BY DEFAULT

Lutz Schmitt - Twitter: @luxux - IA Summit 2017 - Vancouver

illustration by Lutz Schmitt – licensed under cc-by-nd 4.0



PRIVACY BY DEFAULT

A CONCEPT FOR PRIVACY IN A WORLD WITH THE INTERNET OF THINGS

illustration by Lutz Schmitt – licensed under cc-by-nd 4.0

Missing parts for a world with ambient intelligence, that I would want to live in.

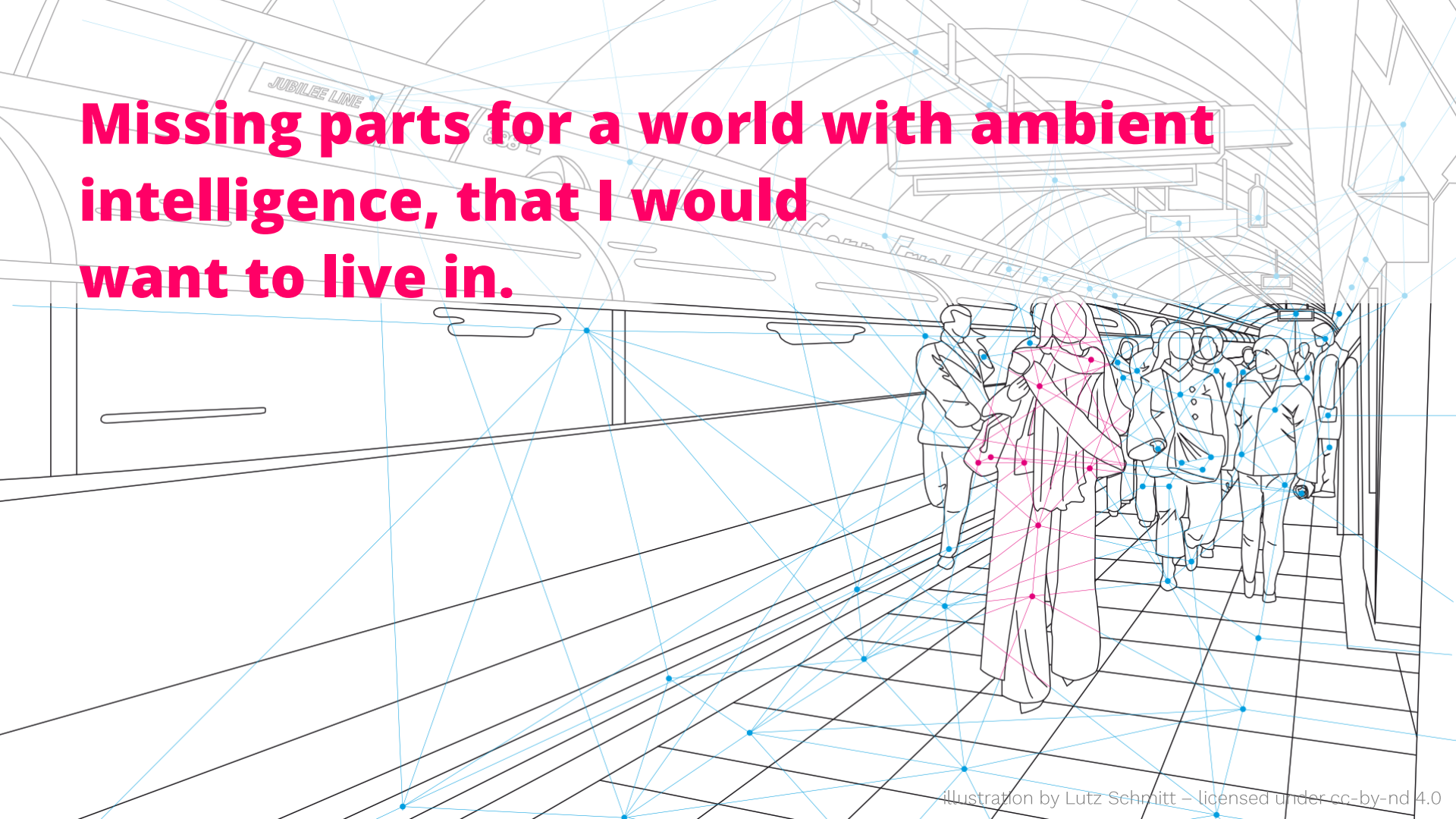
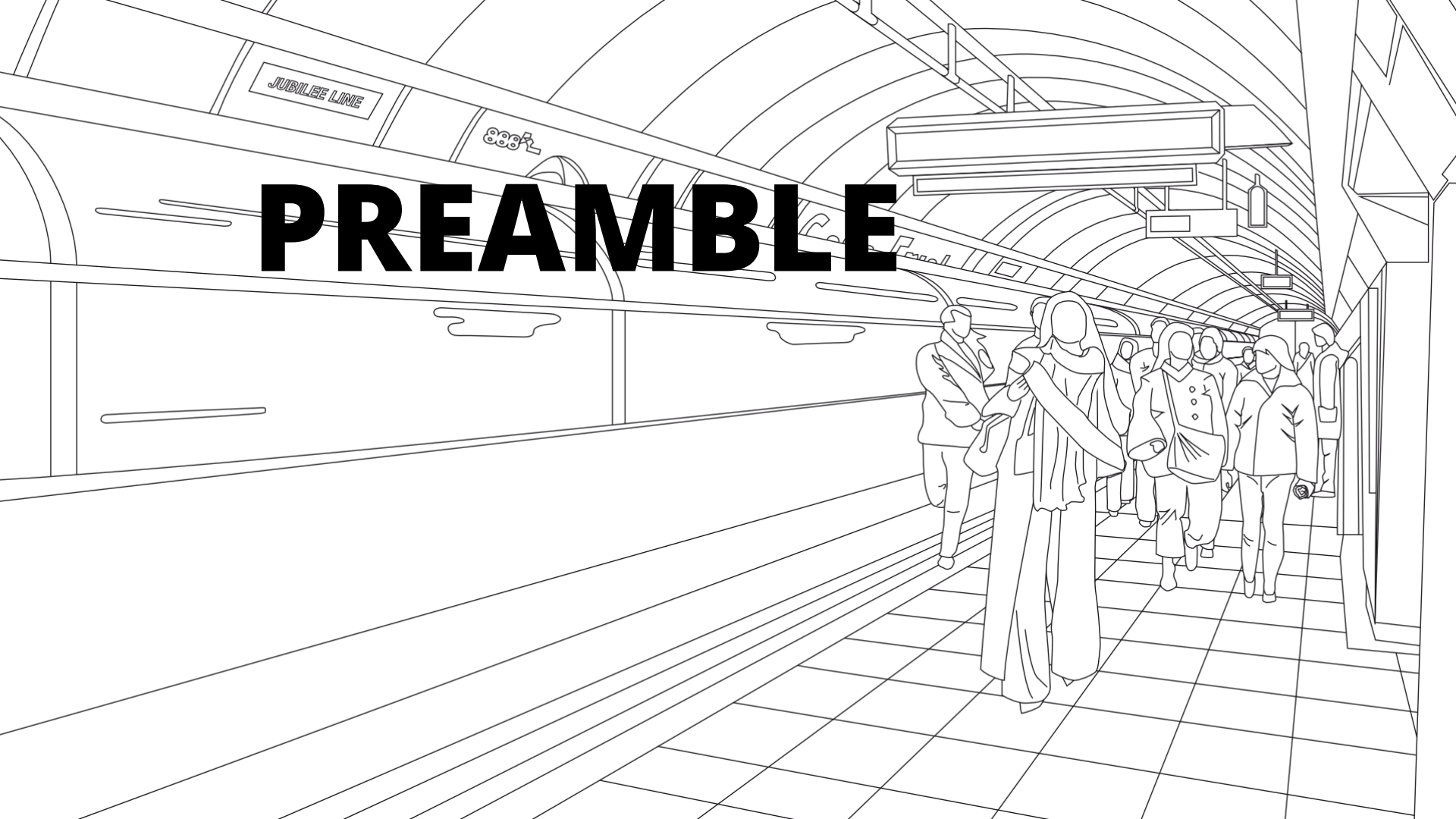


illustration by Lutz Schmitt – licensed under cc-by-nd 4.0



PREAMBLE

SECURITY IS FUNDAMENTAL

it isn‘t really worth talking about privacy
in an insecure environment

IT'S ALL ABOUT SOCIETY

and how technology is used to help shaping it.

AND IT’S ABOUT BUSINESS

Metro
@MetroUK

Folgen

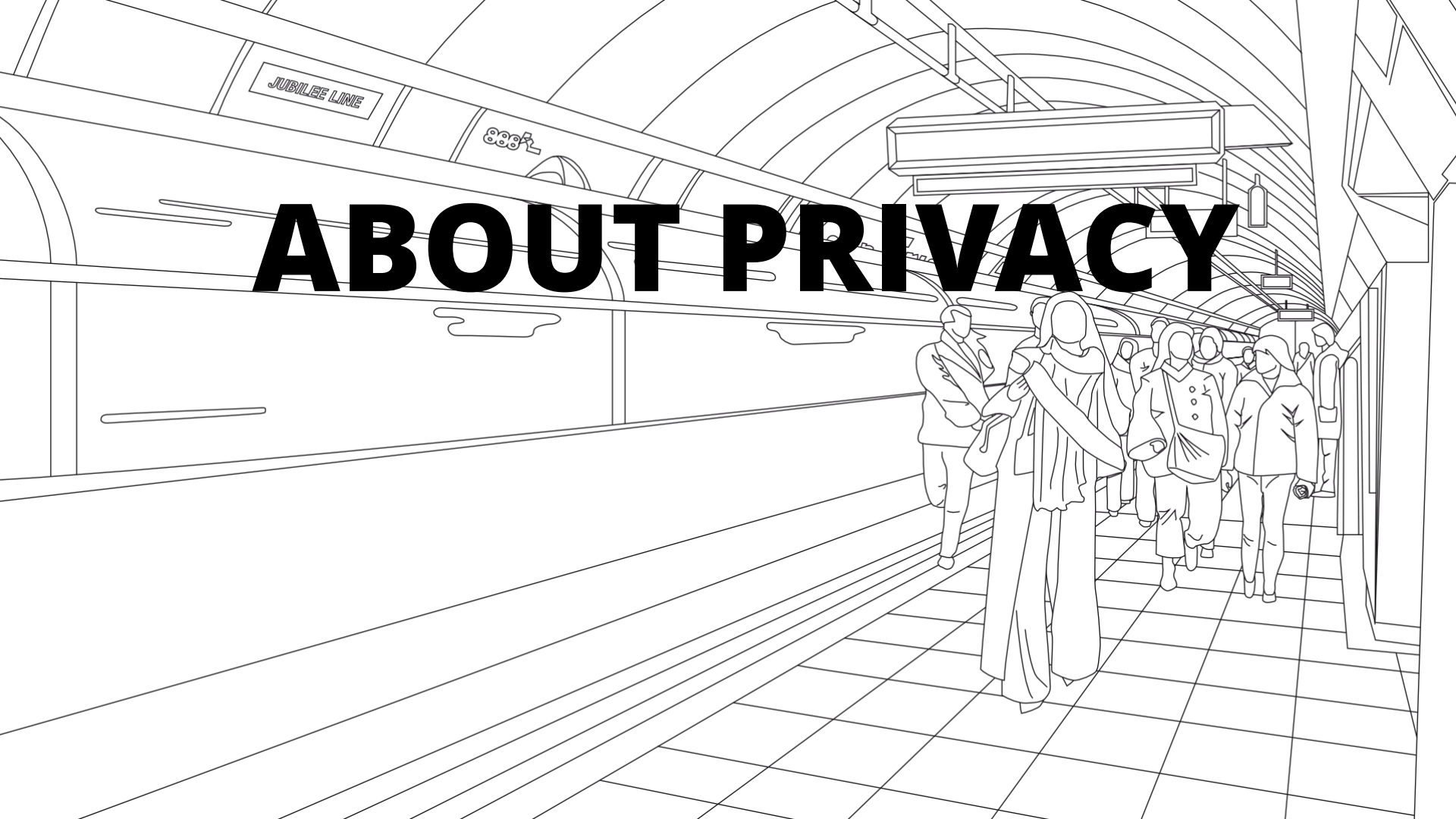
‘Smart dildo’ was spying on my vagina, woman claims

‘Smart dildo’ was spying on my vagina, woman claims

Could someone have compromised the back end?

metro.co.uk

https://twitter.com/MetroUK/status/776150782194376704



ABOUT PRIVACY

you VERSUS the others

THE RIGHT TO BE LET ALONE

The Right to Privacy (Brandeis & Warren)

Harvard Law Review, 15 Dec 1890

LIMITATIONS TO THE RIGHT TO PRIVACY

1. The right to privacy does not prohibit any publication … which is of public … interest

4. The right to privacy ceases upon the publication of the facts by the individual, or with his consent.

Would you hand over your Facebook-Login to a stranger?

Photo by Beatrice Murch on flickr. Licensed under cc-by-sa 2-0

you AND the others

"Each individual is continually engaged in a personal adjustment process in which he balances the desire for privacy with the desire for … communication …"

Alan Westin in Privacy and Freedom, 1968

STATES OF PRIVACY

according to Alan Westin

SOLITUDE *privacy of individuals*

INTIMACY *privacy of groups*

ANONYMITY *unidentifiability in public*

RESERVE *(psychological) barriers / resilience*

STATES OF PRIVACY

according to Alan Westin, extended by me

SOLITUDE *privacy of individuals*

INTIMACY *privacy of groups*

ANONYMITY *unidentifiability in public*

RESERVE *(psychological) barriers / resilience*

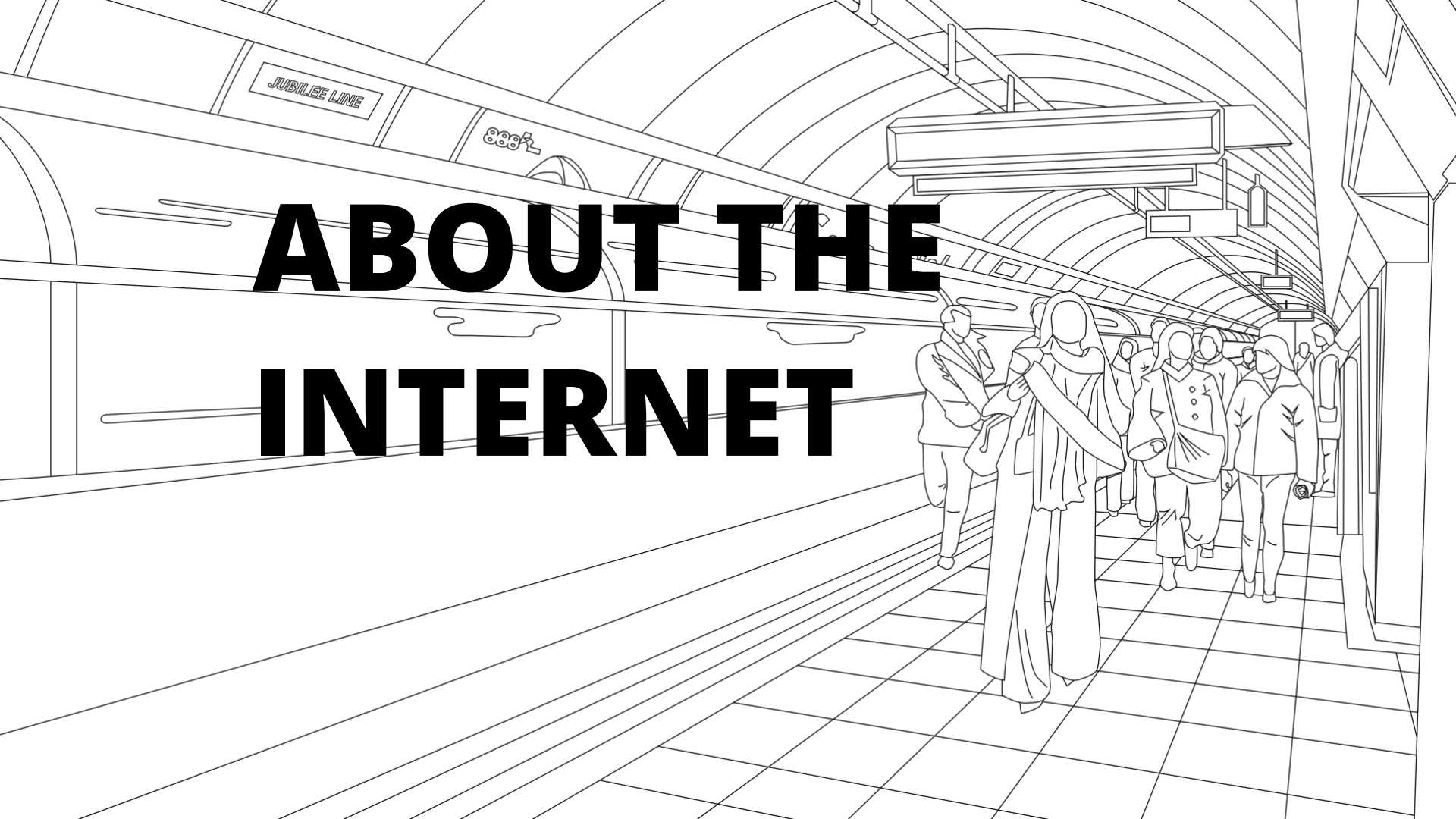
PSEUDONYMITY *choice of identification*

Article 12

Universal Declaration of Human Rights

No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks.

http://www.un.org/en/universal-declaration-human-rights/



ABOUT THE INTERNET

THE INTERNET IS BROKEN.

photo by Wally Gobetz on flickr.com licensed under cc-by-nc-nd 2.0

Facebook is Mark Zuckerberg's living room.

His living room, his rules.

photo by Danny Howard on flickr.com licensed under cc-by-nc 2.0

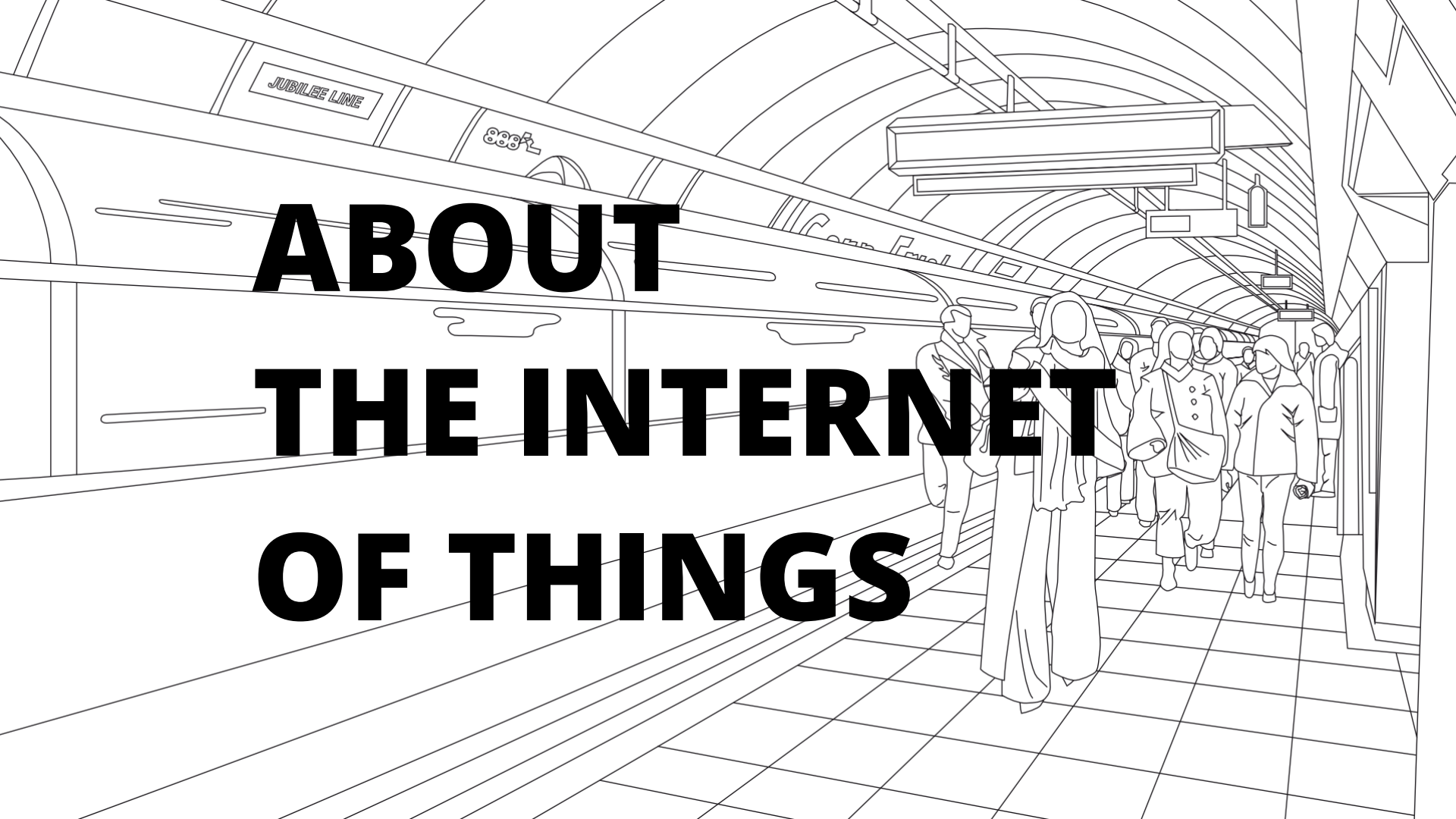
photo by Wally Gobetz on flickr.com licensed under cc-by-nc-nd 2.0

remember the fight for net neutrality?

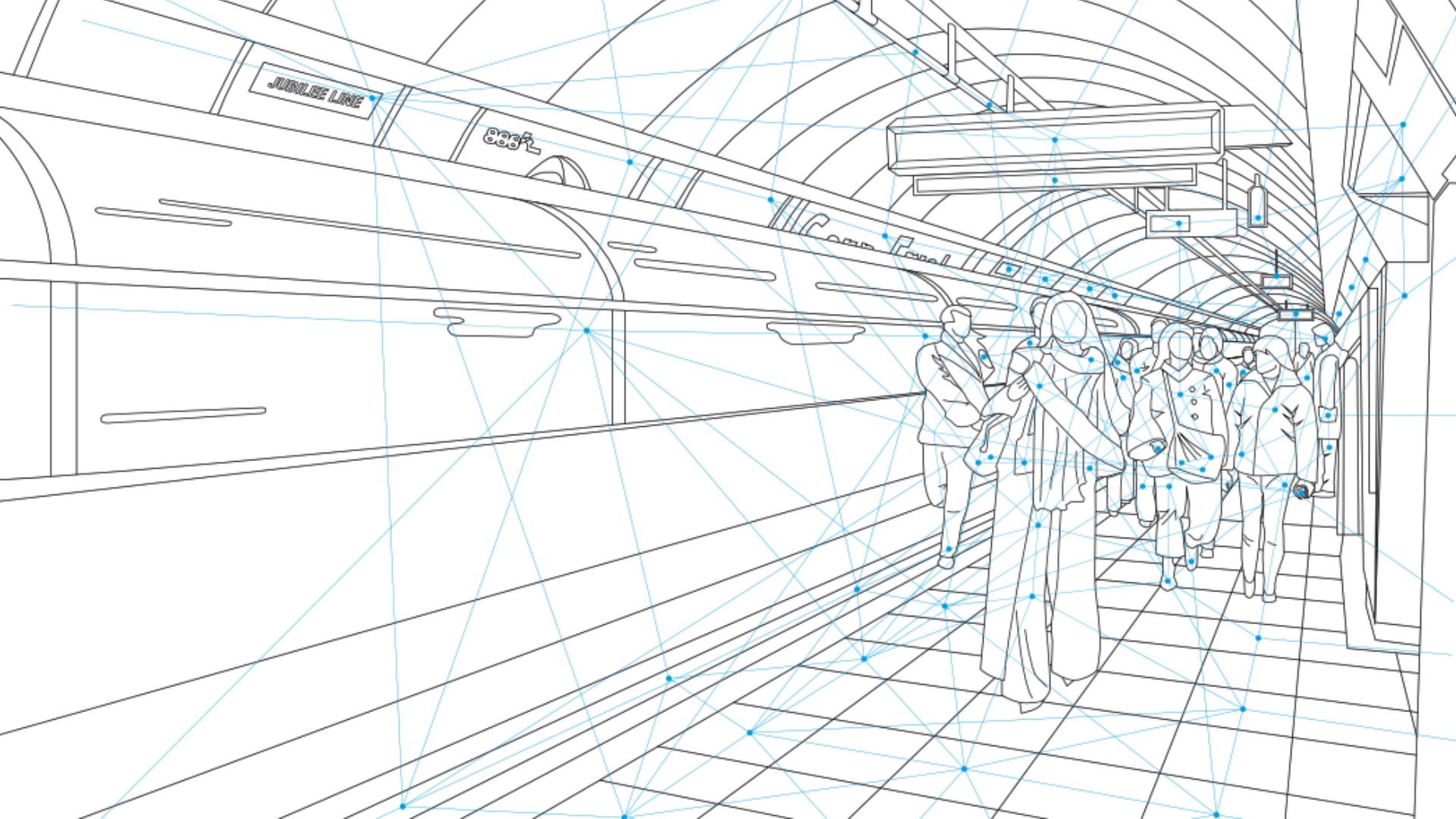
photo by NewbleRunner on flickr.com licensed under cc-by-sa 2.0

and it‘s getting worse

with the Internet of Things



ABOUT THE INTERNET OF THINGS


JUBILEE LINE

Remote controlling your lightbulbs,
is not the IoT. It‘s remote controlling your lightbulbs.

photo by Philips. Released as press material. All rights reserved.

devices that need a cloud connection
are not the Internet of Things. That's just DRM for the physical world.
revolv
HOME
photo by revolv. Press material.

Be careful of what you say in front our Smart TV, warns Samsung

By Ryan De Souza on February 16, 2016 Email @hackread NEWS PRIVACY SAMSUNG SURVEILLANCE

BEWARE OF SAMSUNG SMART TVS—VOICE RECOGNITION COULD BE RECORDING AND SHARING YOUR PRIVATE CONVERSATIONS

Digital age has brought along countless blessings and conveniences for the consumers but there are quite a few dangers associated with the **Internet of Things (IoT)** that are hard to ignore.

Source: https://www.hackread.com/samsung-smart-tv-listening-conversations/

we have reached zero effective cost

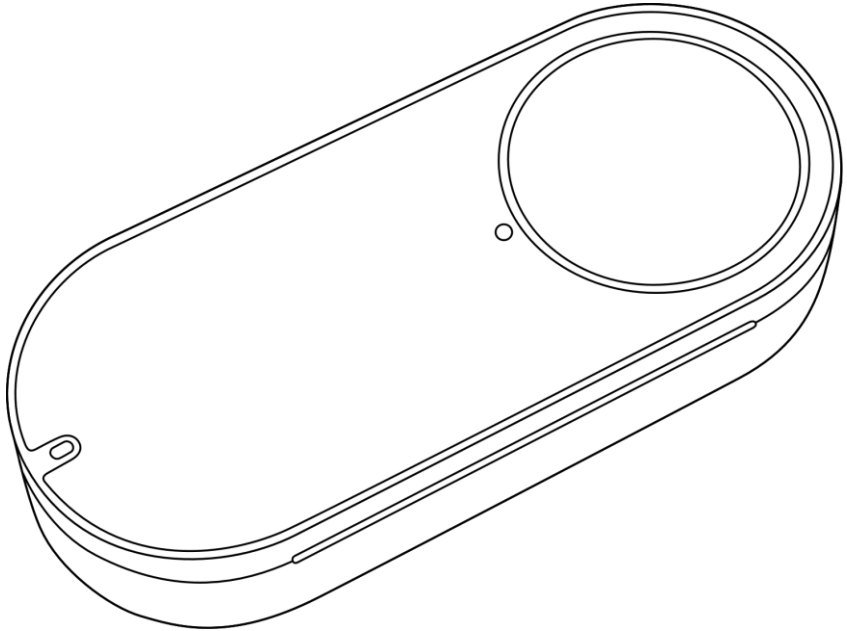
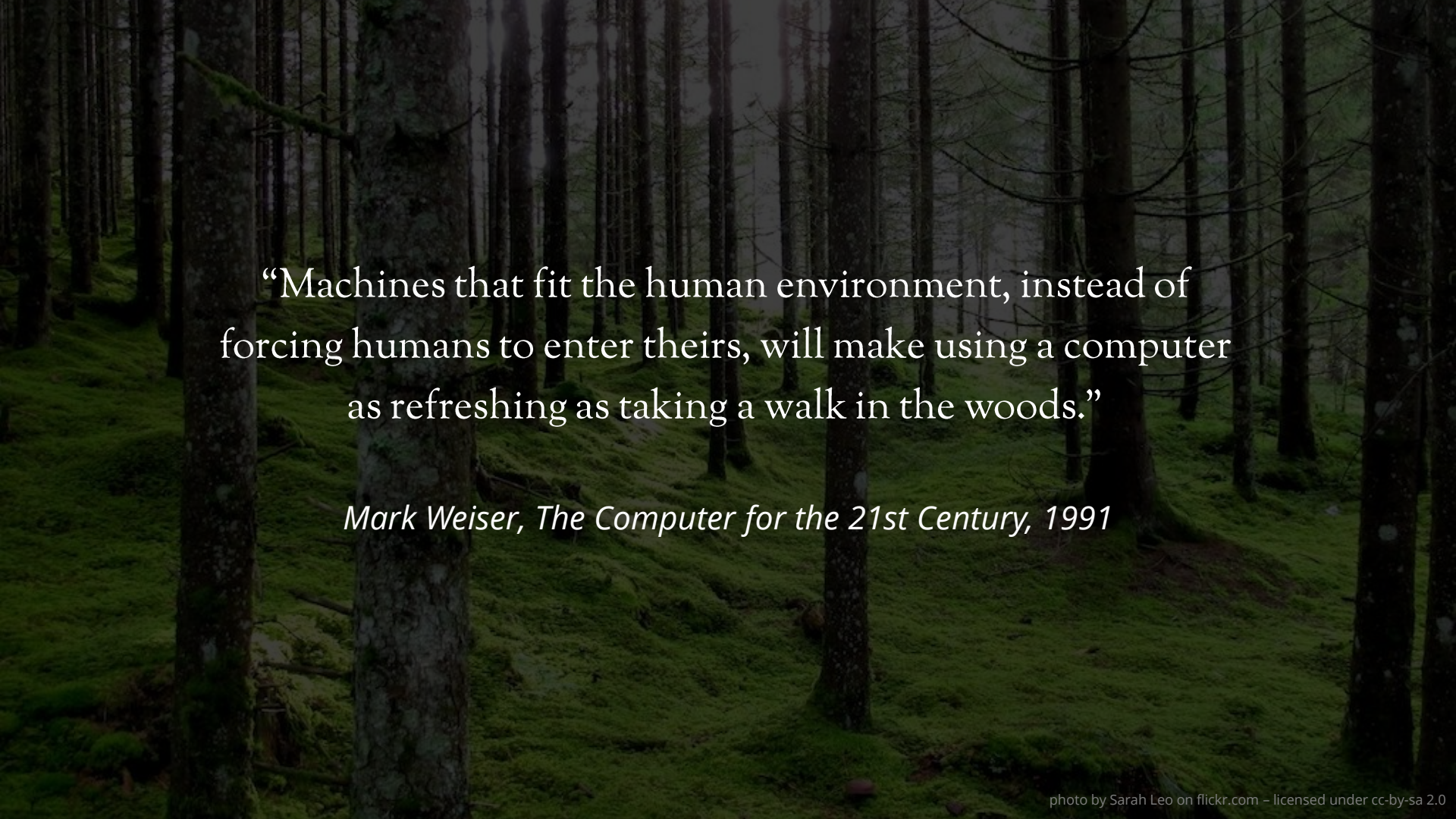


illustration by Lutz Schmitt published under cc-by-nc 4.0

computers begin to be inseperably weaved into the fabric of our physical reality

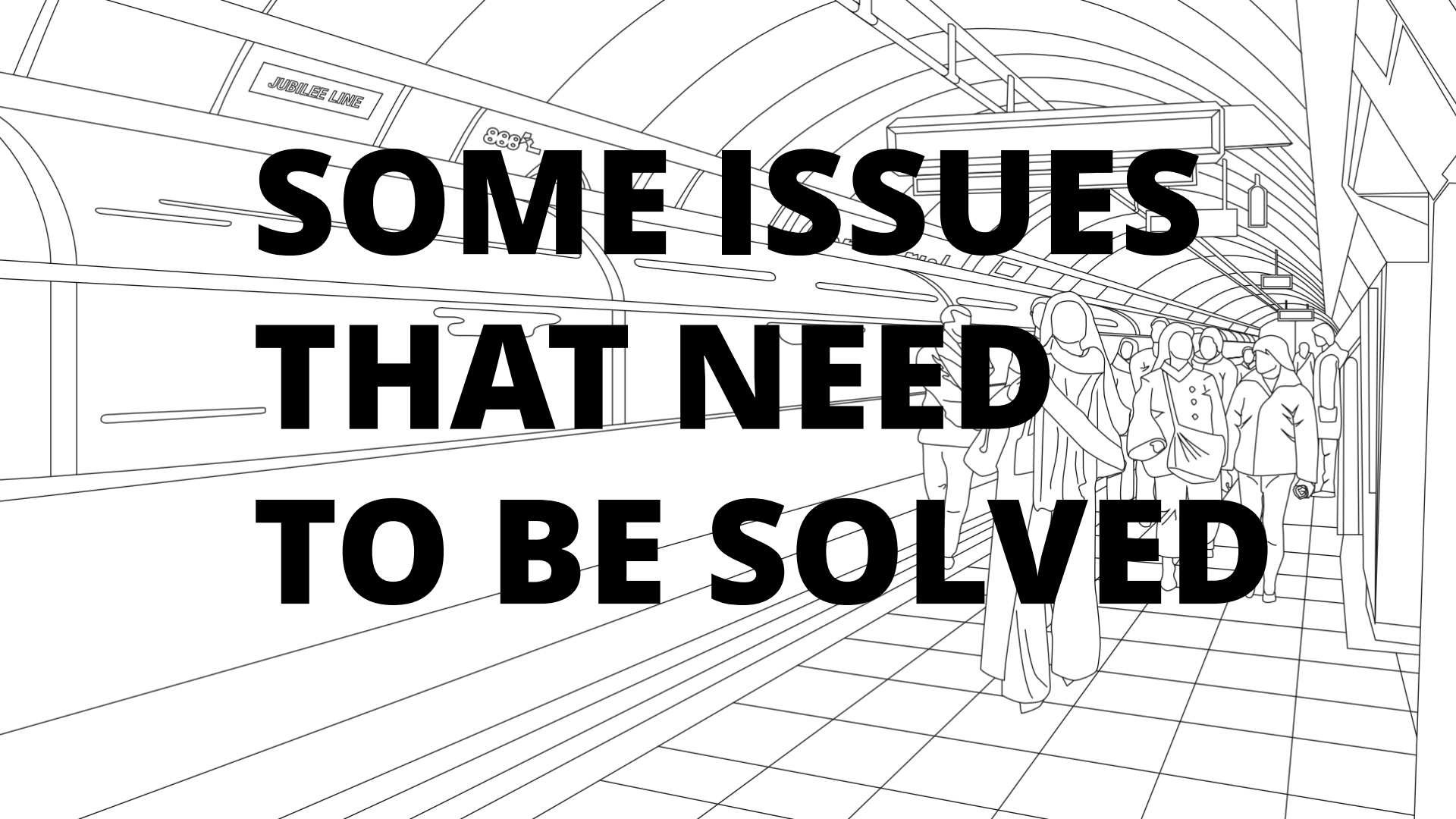
illustration by Lutz Schmitt published under cc-by-nc 4.0



“Machines that fit the human environment, instead of forcing humans to enter theirs, will make using a computer as refreshing as taking a walk in the woods.”

Mark Weiser, The Computer for the 21st Century, 1991

photo by Sarah Leo on flickr.com – licensed under cc-by-sa 2.0



SOME ISSUES THAT NEED TO BE SOLVED

ISSUE #1

“If I don‘t want to be tracked, I switch off my phone.”

a friend, on how to use smartphones and stay private

AMBIENT INTELLIGENCE WON'T COME WITH A POWER BUTTON

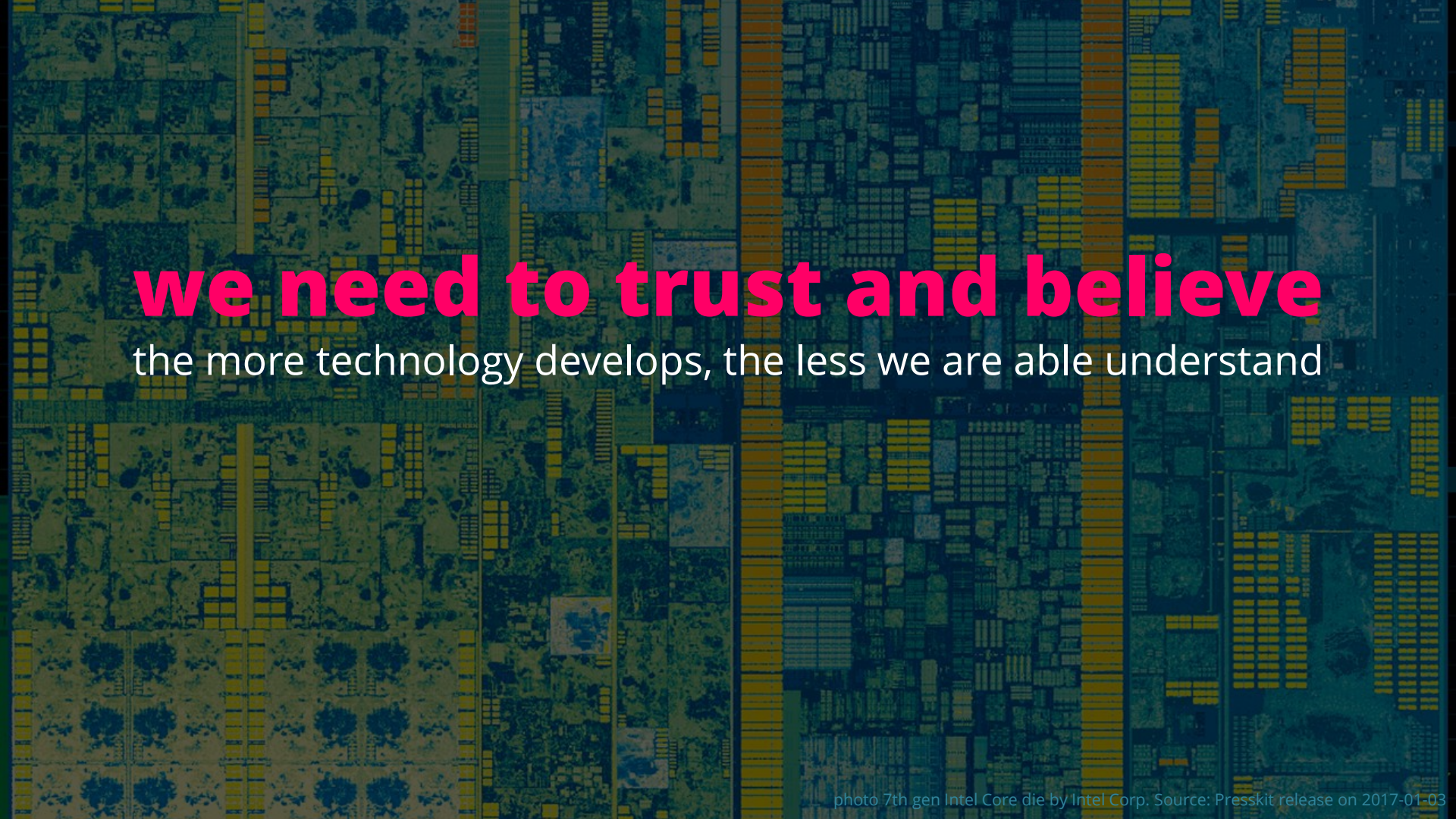
photo by Juan Ignacio Sánchez Lara on flickr. Licensed under cc-by-nc-sa-2

WHAT MEANS OF CONTROL CAN BE ESTABLISHED

If shutting down is no option anymore?

Still from 2001: A Space Odyssey. Source: https://youtu.be/l2c_rSLXq6U

ISSUE #2



we need to trust and believe

the more technology develops, the less we are able understand

photo 7th gen Intel Core die by Intel Corp. Source: Presskit release on 2017-01-03

"Any sufficiently advanced technology
is indistinguishable from magic."

Arthur C. Clarke, Hazards of Prophecy, 1962

How do we design this magic reality,
that people mustn‘t fear it, but are empowered?

Still from Her. Source: Press material.

ISSUE #3

decisions and setups all the time

may it be an app, a website, a washing machine or else

teaching and answering computers

is a sisyphean task already

HOW CAN WE AVOID

INTERACTION OVERLOAD

?

ISSUE #4

the IoT is dissolving our places

and meanings of the physical world

How must we architect the virtual dimension of things and places,
that our perception of reality won't be broken?

Photo by Deraman Uskratzt on flickr.com. Licensed under cc-by-sa 2.0.

ISSUE #5

mass surveillance is a reality

and those in control are not willing to let it go

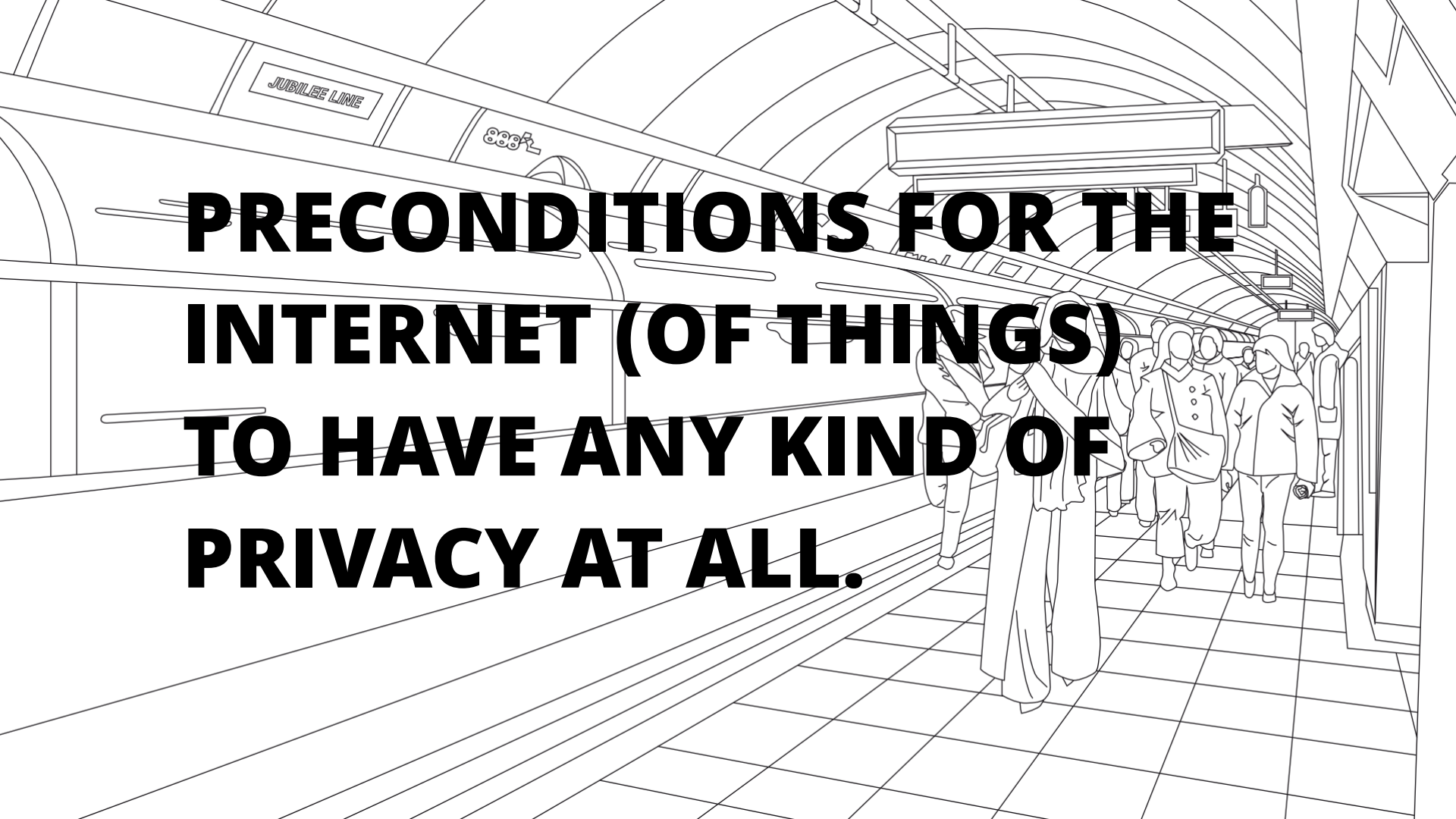
Photo by Jeremy Brooks on flickr.com. Licensed under cc-by-nc 2.0.

WE LACK BALANCE

between individual interests and those of corporations, governments and the public

Screenshot. Source: the internet

HOW CAN WE ESTABLISH A FAIR BALANCE,
instead of increasing the unequality?



PRECONDITIONS FOR THE INTERNET (OF THINGS) TO HAVE ANY KIND OF PRIVACY AT ALL.

TECHNOLOGY MUST BE SECURE

THE NETWORK MUST BE PUBLIC

EVERYTHING

MUST BE

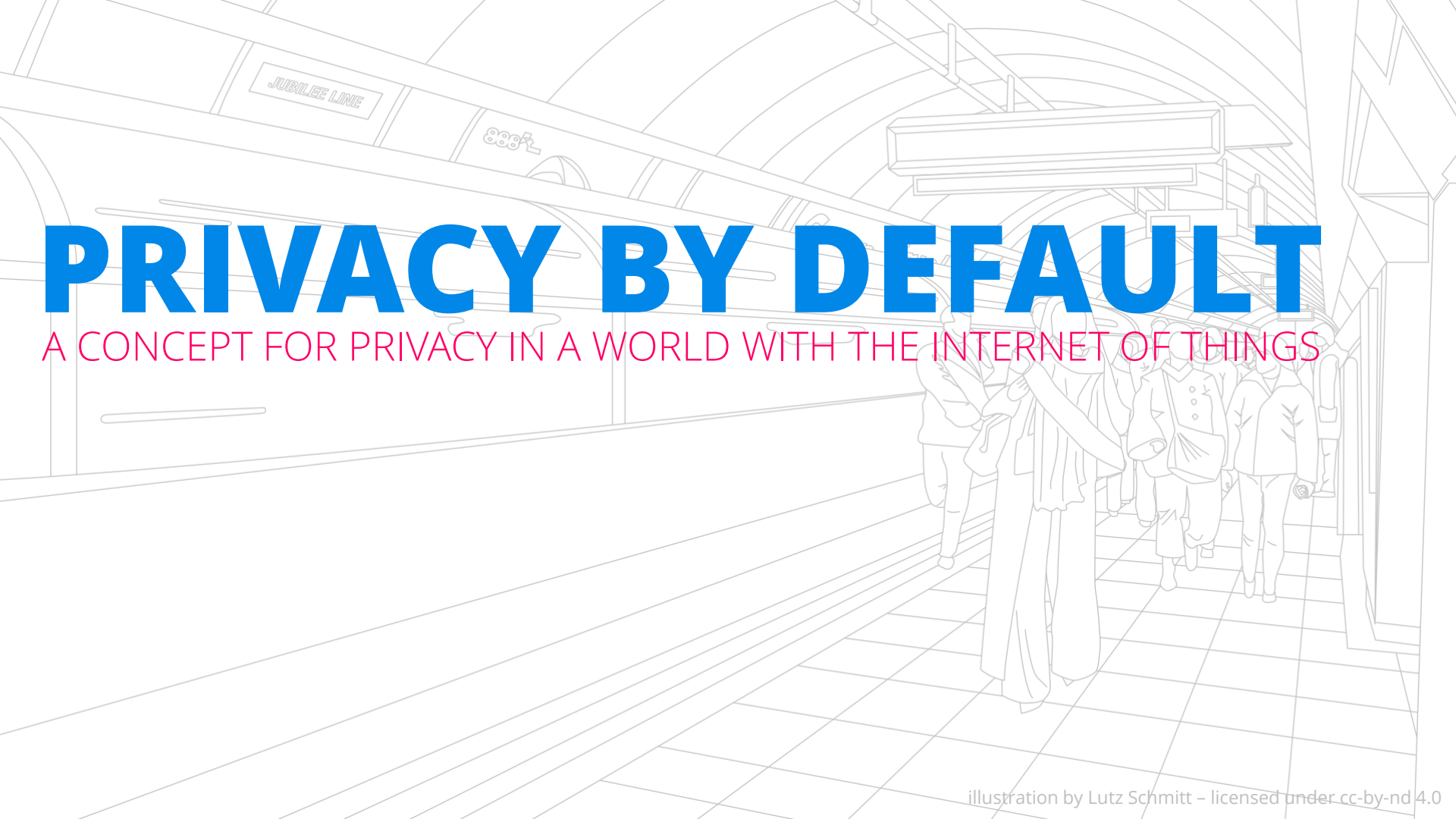
IDENTIFIABLE

COMMUNICATION

MUST BE

REFUSABLE

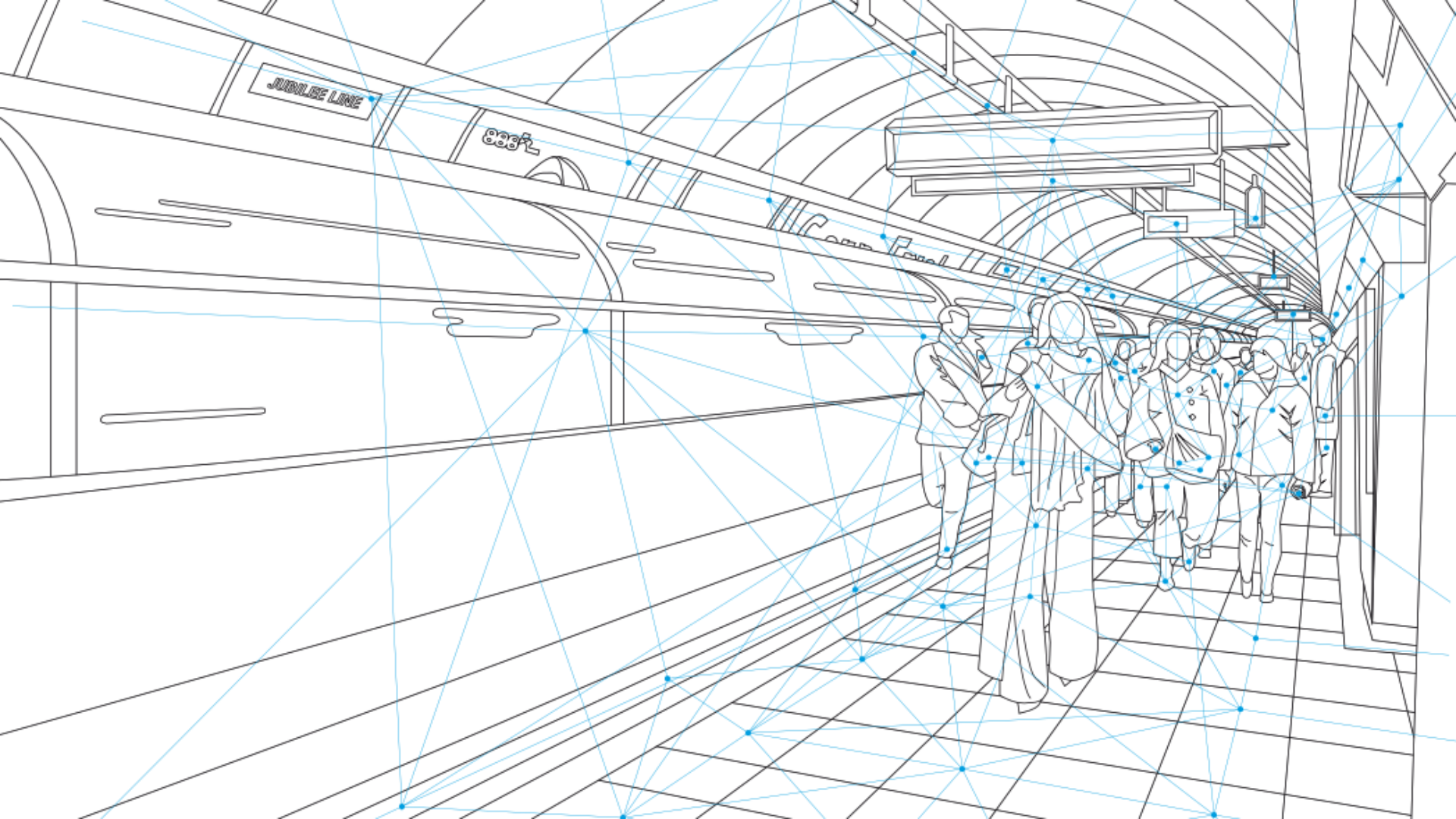
A PERSON'S INTENT MUST BE KNOWN

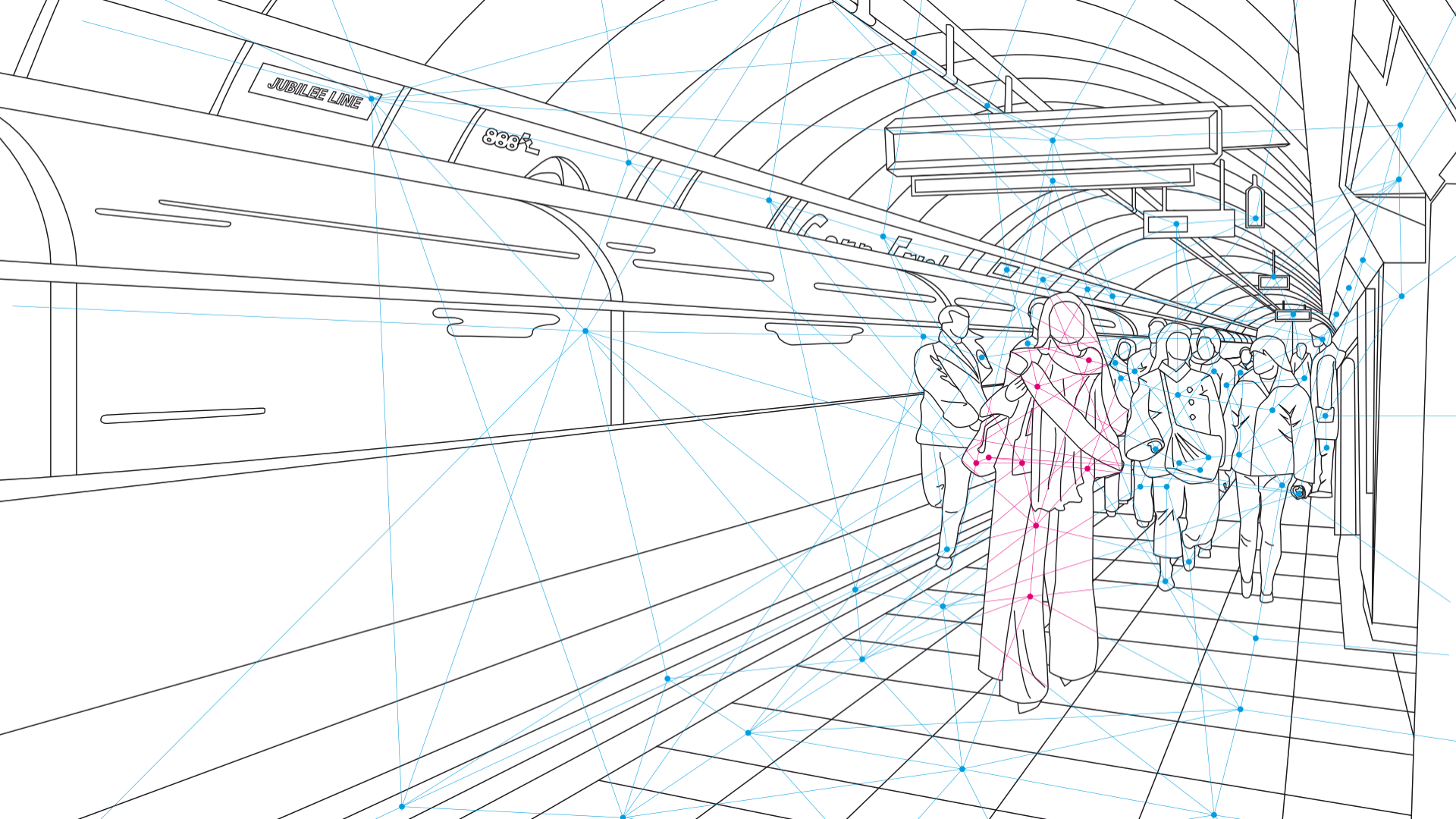


PRIVACY BY DEFAULT

A CONCEPT FOR PRIVACY IN A WORLD WITH THE INTERNET OF THINGS

illustration by Lutz Schmitt – licensed under cc-by-nd 4.0


JUBILEE LINE


JUBILEE LINE
88

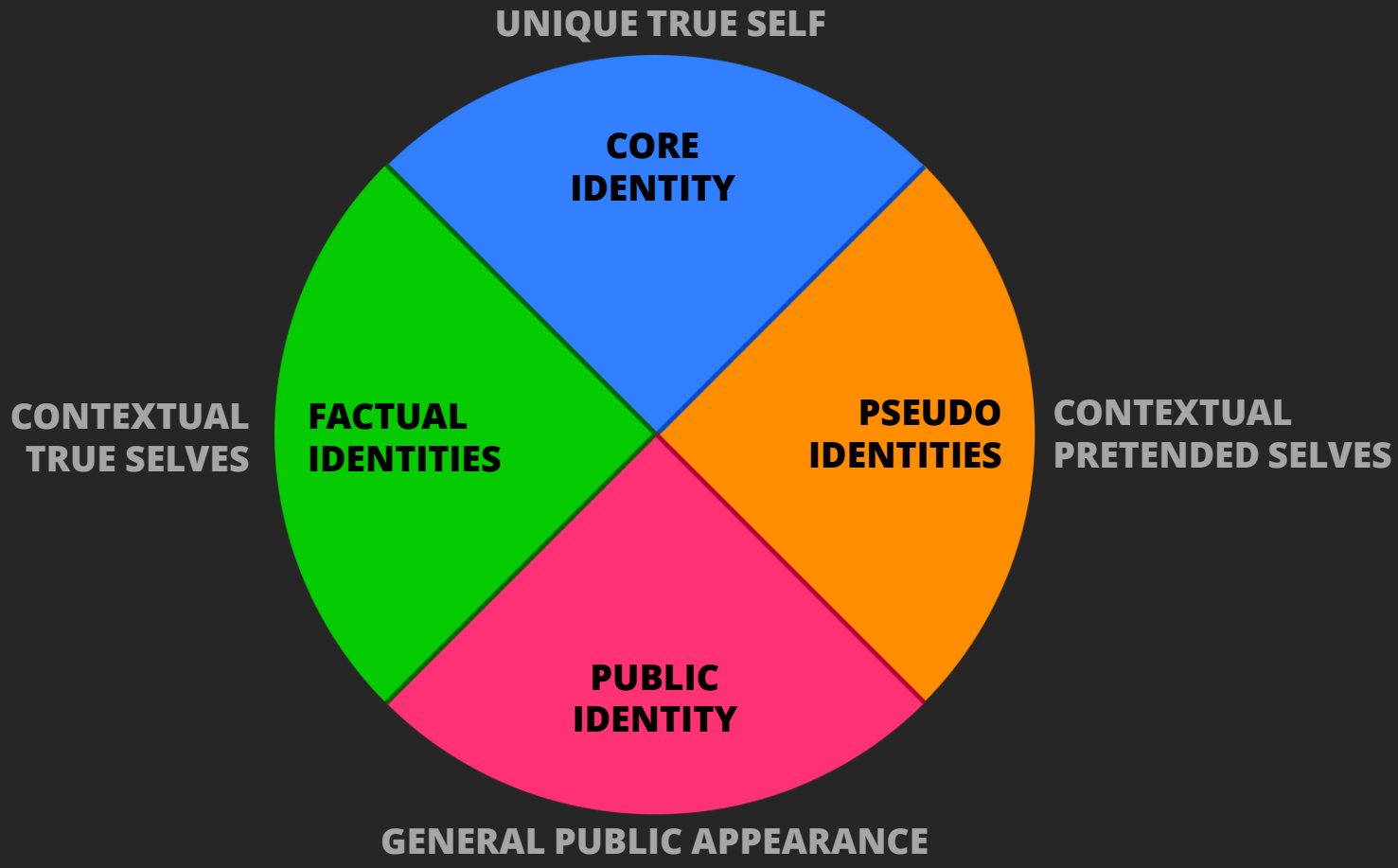
INTRODUCING IDENTITY

IDENTITY IS WHO WE ARE

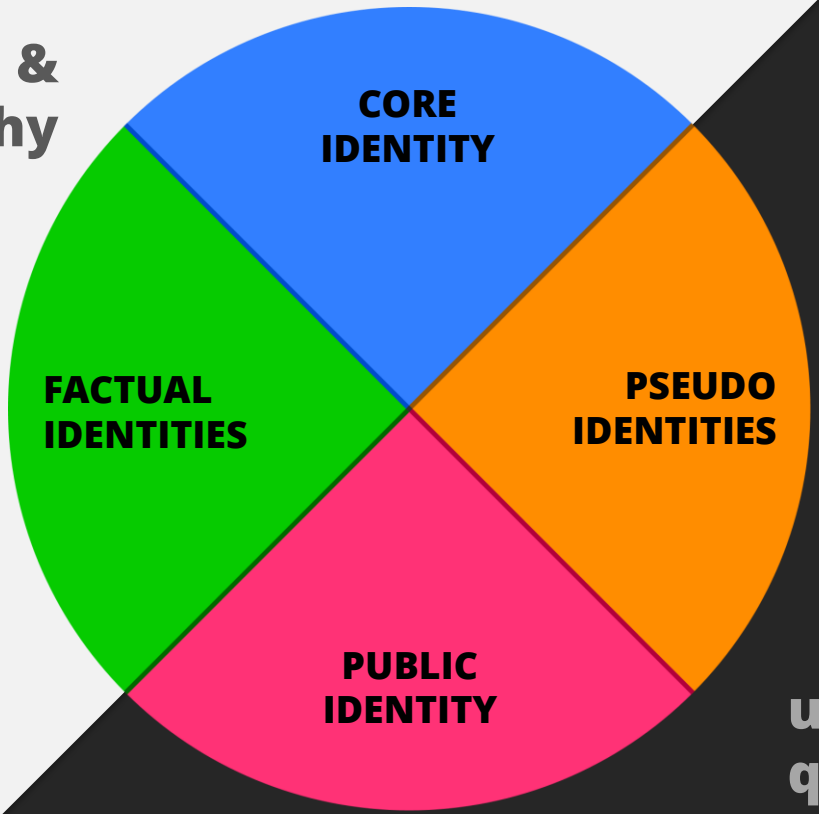
to ourselves and to others

WE HAVE MANY IDENTITIES

friend, professional, internet troll, public speaker, ...

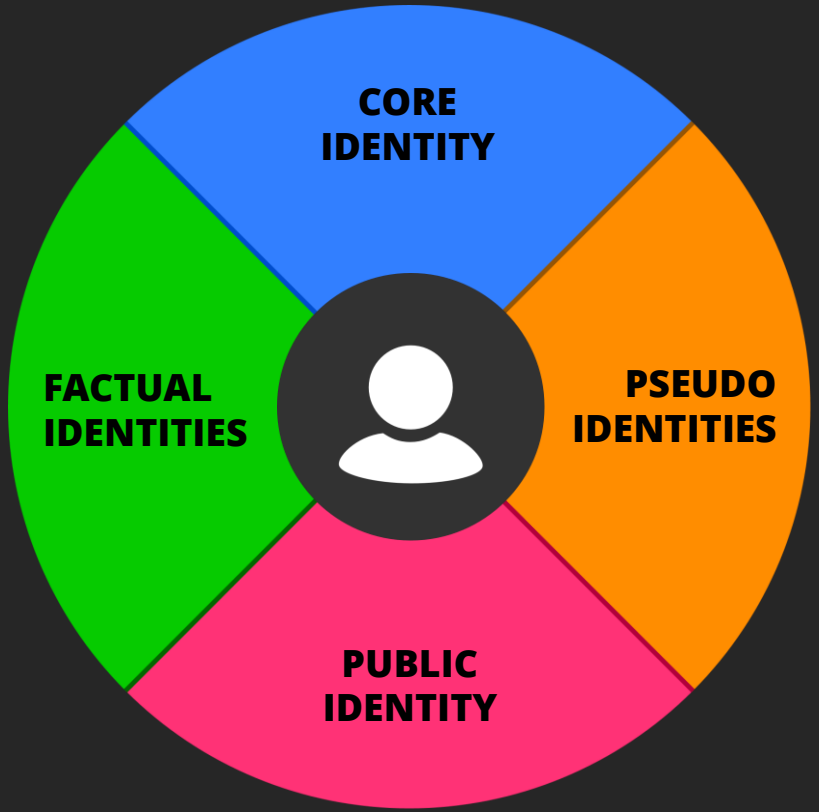

UNIQUE TRUE SELF
CORE IDENTITY
CONTEXTUAL TRUE SELVES
FACTUAL IDENTITIES
PSEUDO IDENTITIES
CONTEXTUAL PRETENDED SELVES
PUBLIC IDENTITY
GENERAL PUBLIC APPEARANCE

verifyable &
trustworthy



unverifyable &
questionable

A HUMAN PERSON'S IDENTITY SET



this identity model is the basic rule set

to define our virtual behaviour and representation and
that allows to manage different situations

EVERYBODY AND EVERYTHING NEEDS AN IDENTITY STRUCTURE

state representation

companies & organisations

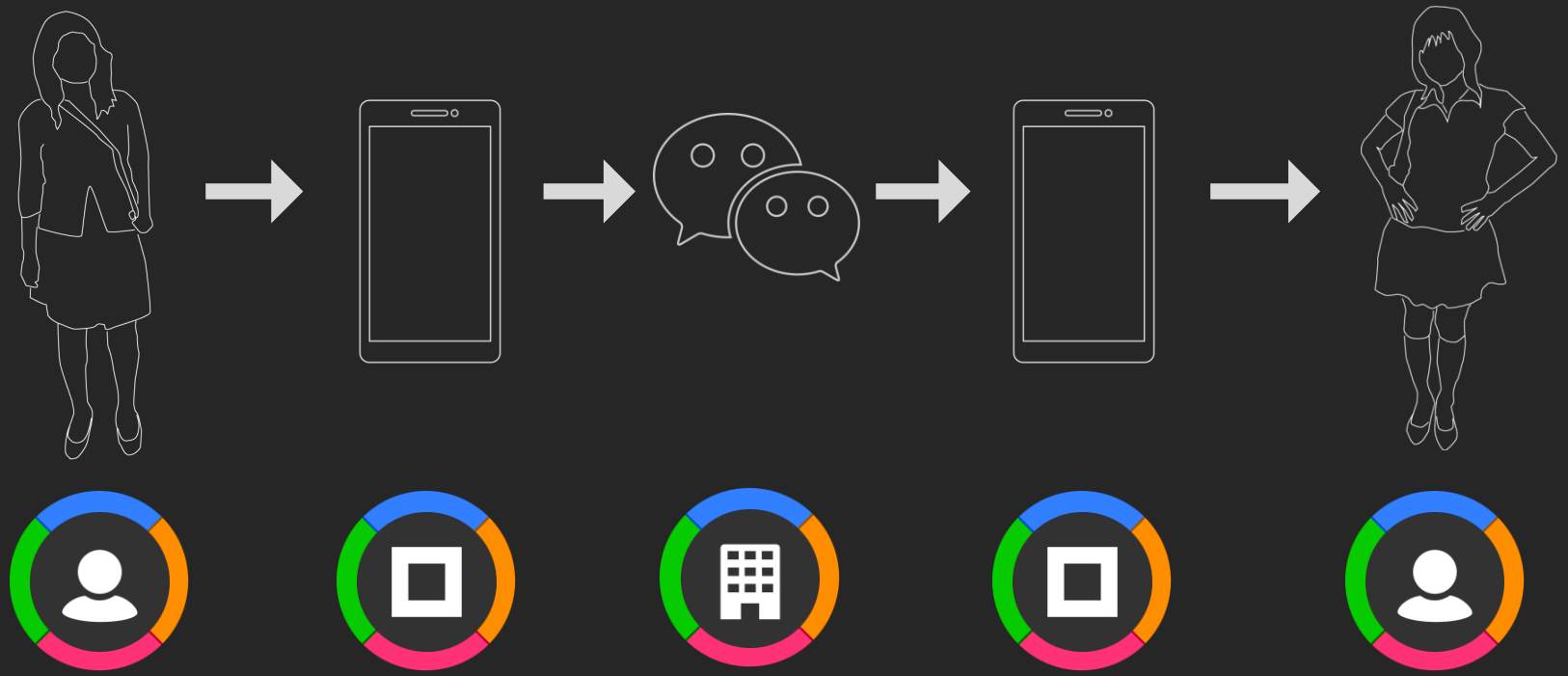
artificial intelligences

objects

places

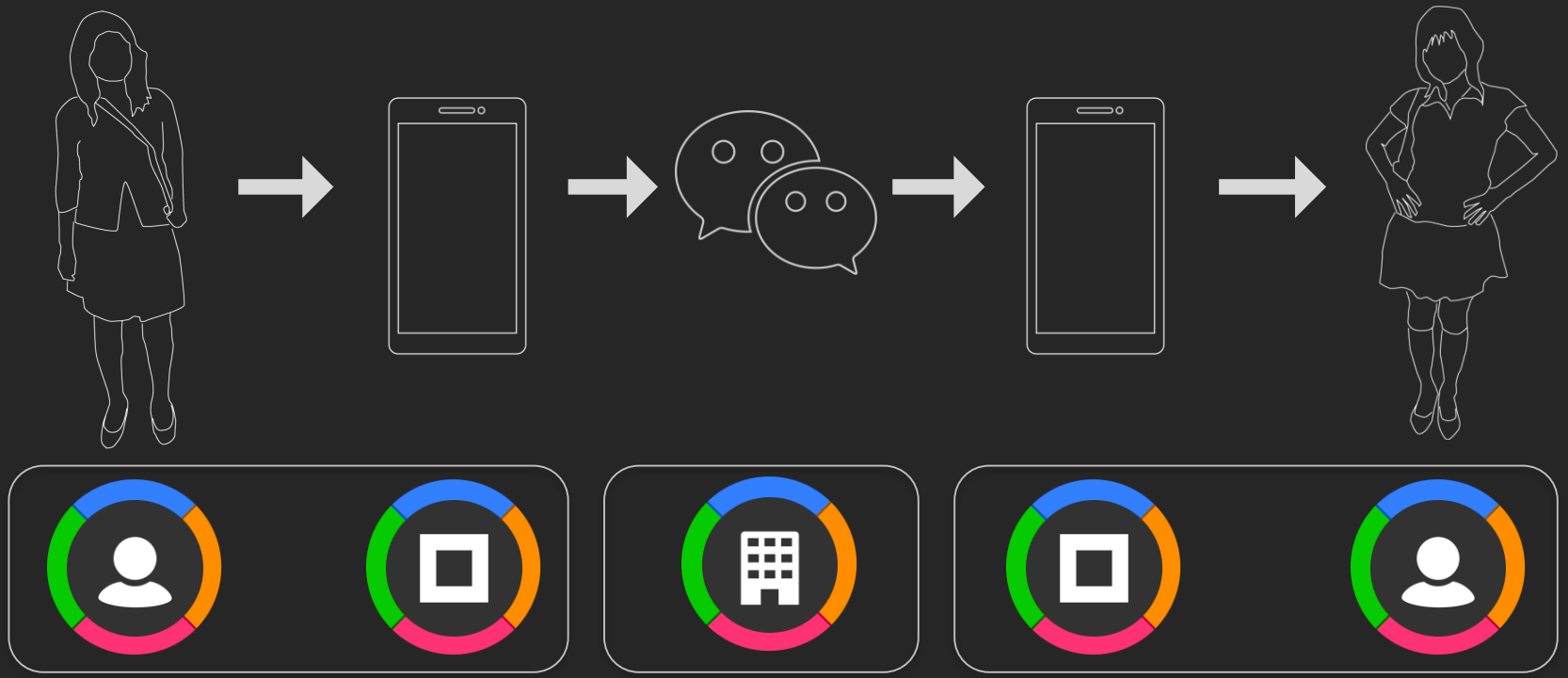
animals

THE WHOLE COMMUNICATION CHAIN IDENTIFIABLE

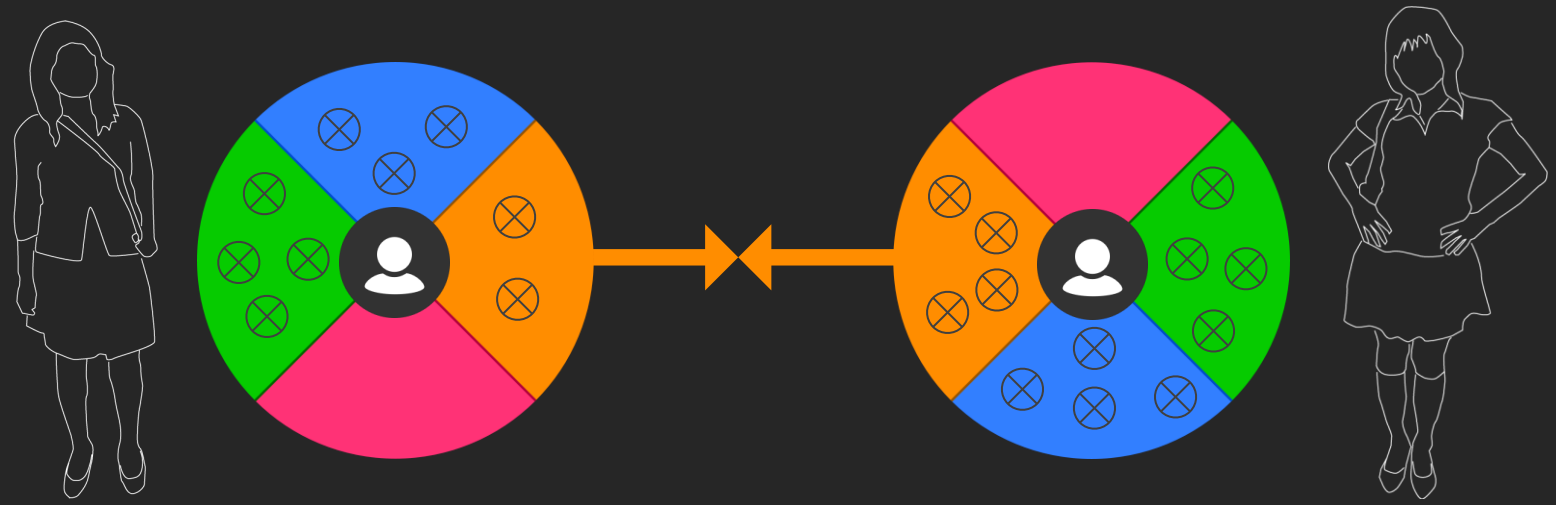


EVERYTHING IS OWNED BY PERSONS

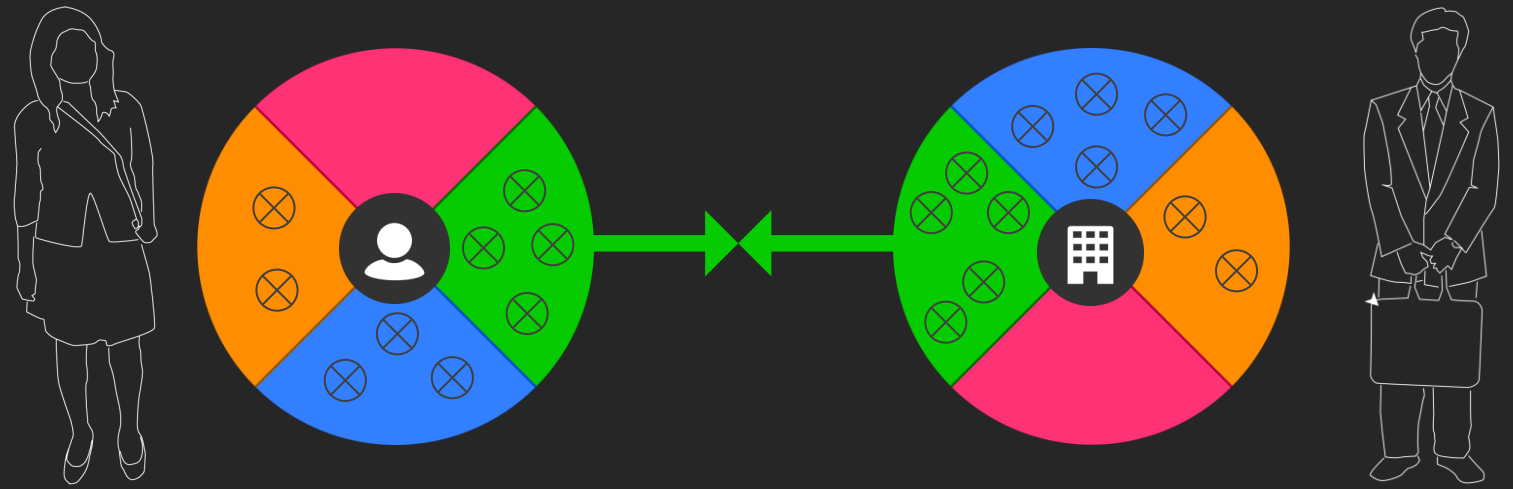
THE WHOLE COMMUNICATION CHAIN IDENTIFIABLE

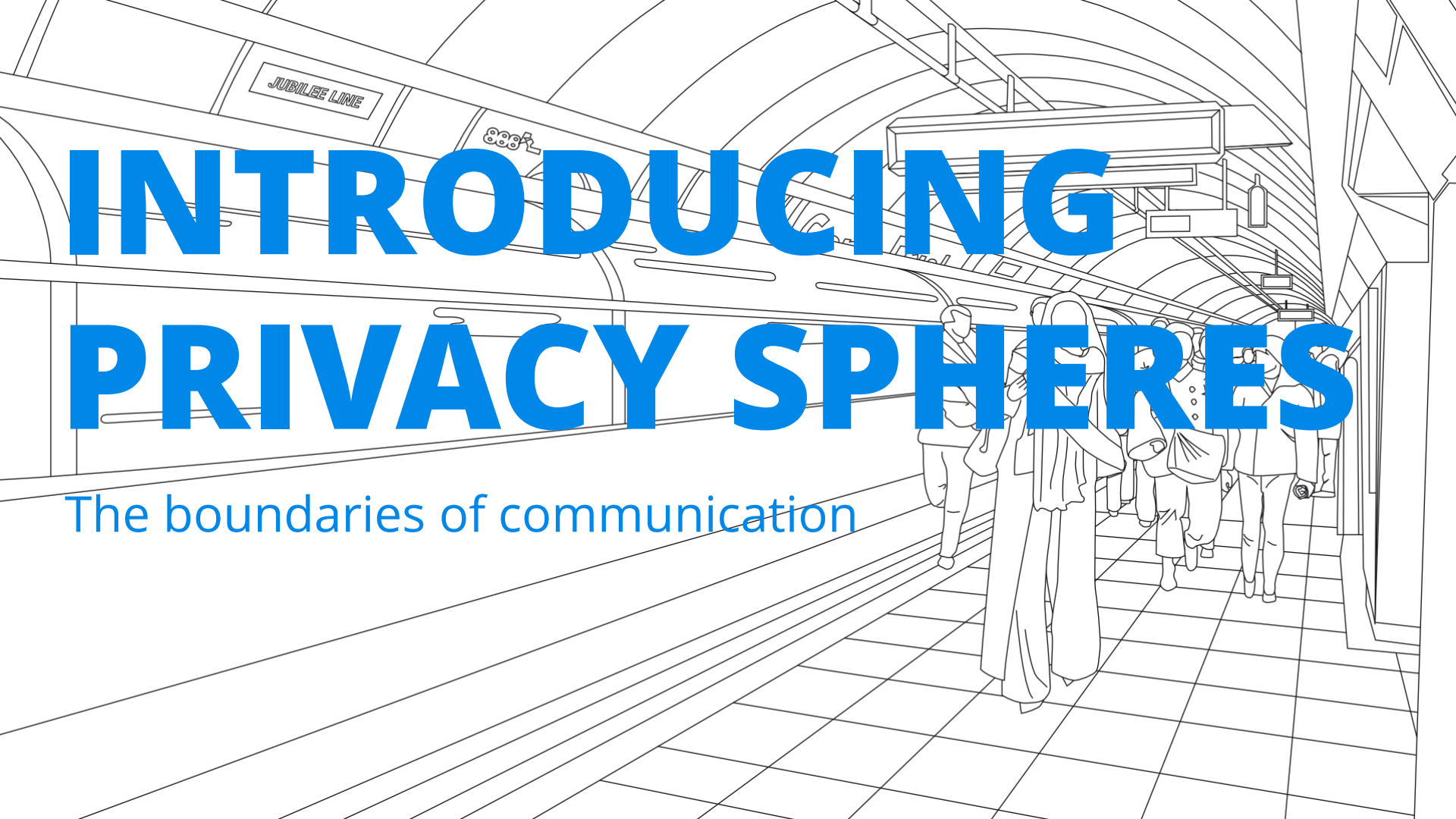


COMMUNICATION IS ALWAYS BETWEEN PERSONS



IDENTITIES REACT ON THE CONTEXT

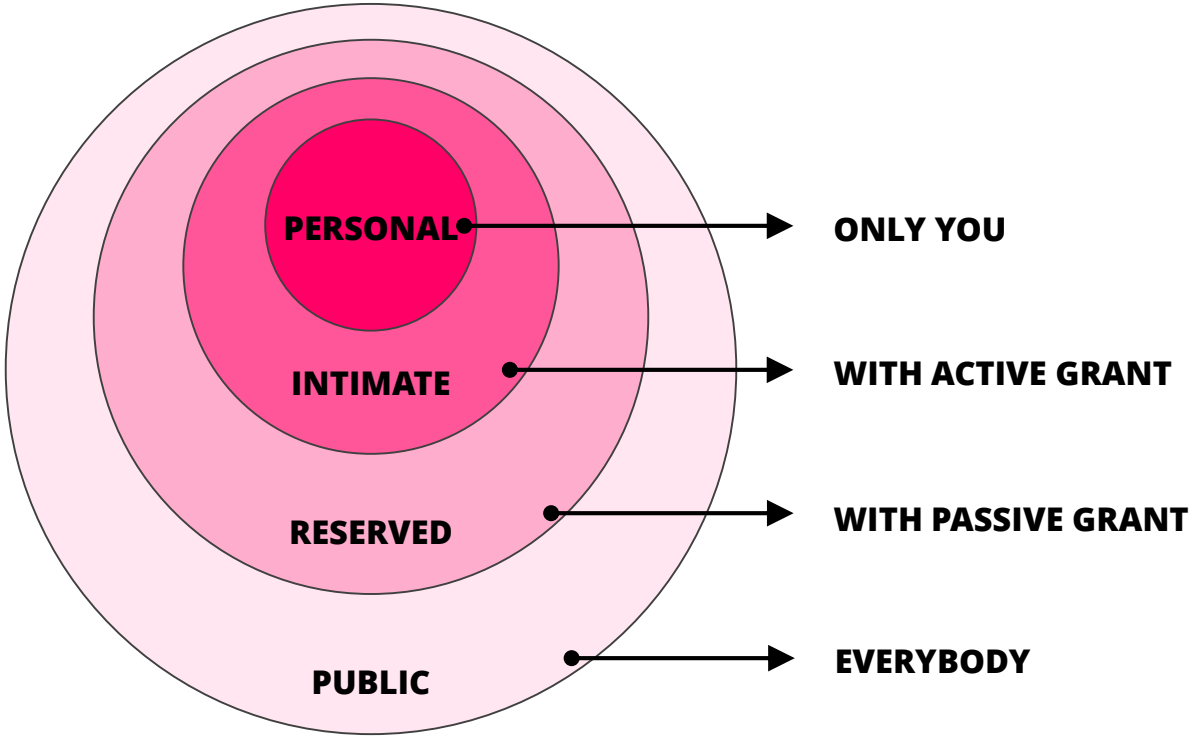


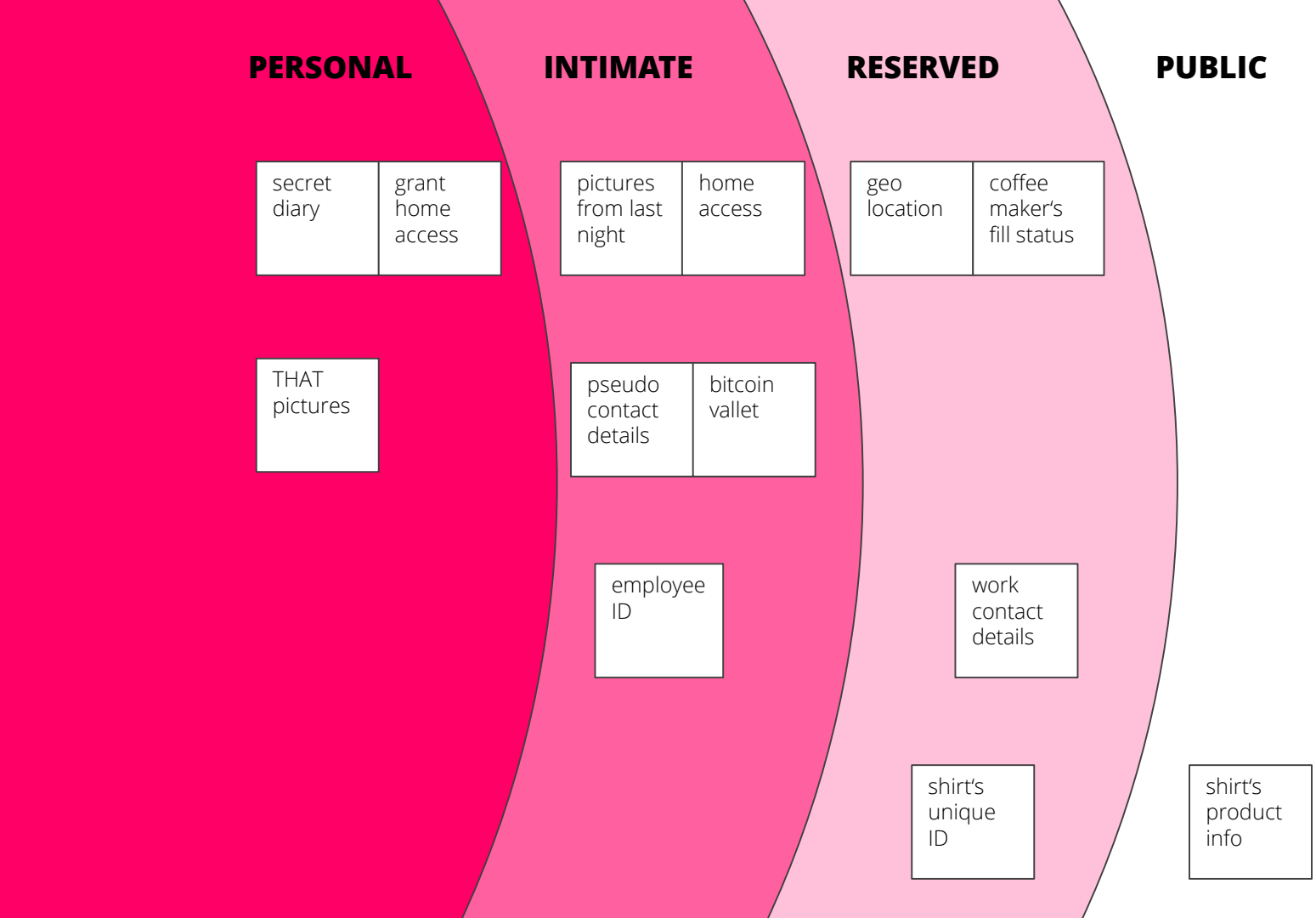


INTRODUCING PRIVACY SPHERES

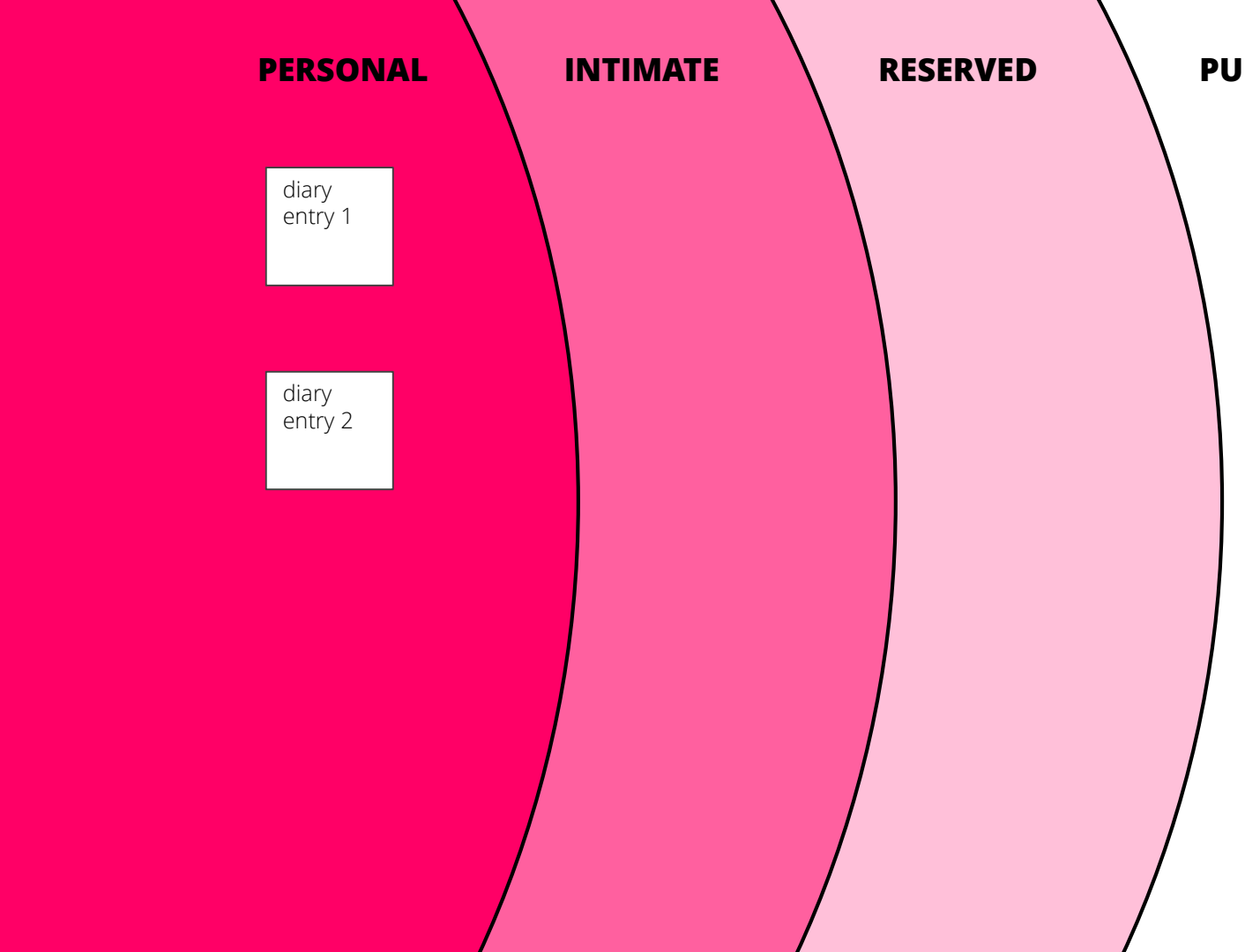
The boundaries of communication

privacy spheres




PERSONAL
INTIMATE
RESERVED
PUBLIC
secret diary
grant home access
pictures from last night
home access
geo location
coffee maker's fill status
THAT pictures
pseudo contact details
bitcoin vallet
employee ID
work contact details
shirt's unique ID
shirt's product info

by default similar data may not be exposed
to a more open level of privacy,
without the person‘s intent.


PERSONAL
INTIMATE
RESERVED
PUBLIC
diary entry 1
diary entry 2

EVERY IDENTITY HAS A DEFAULT,

where data or rights are located

PERSONAL

right to manage use

INTIMATE

right to use

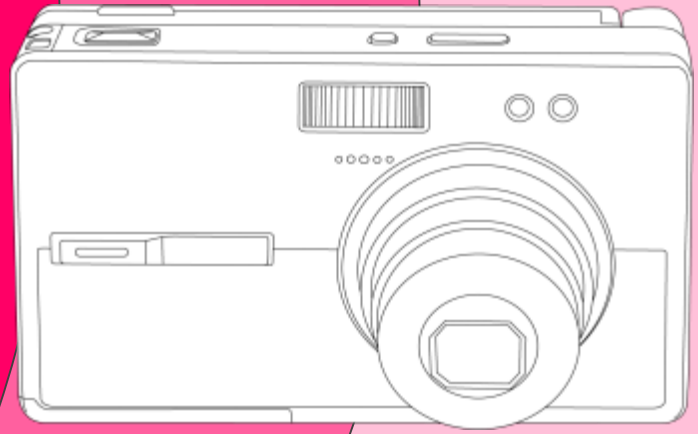
sensor data

RESERVED

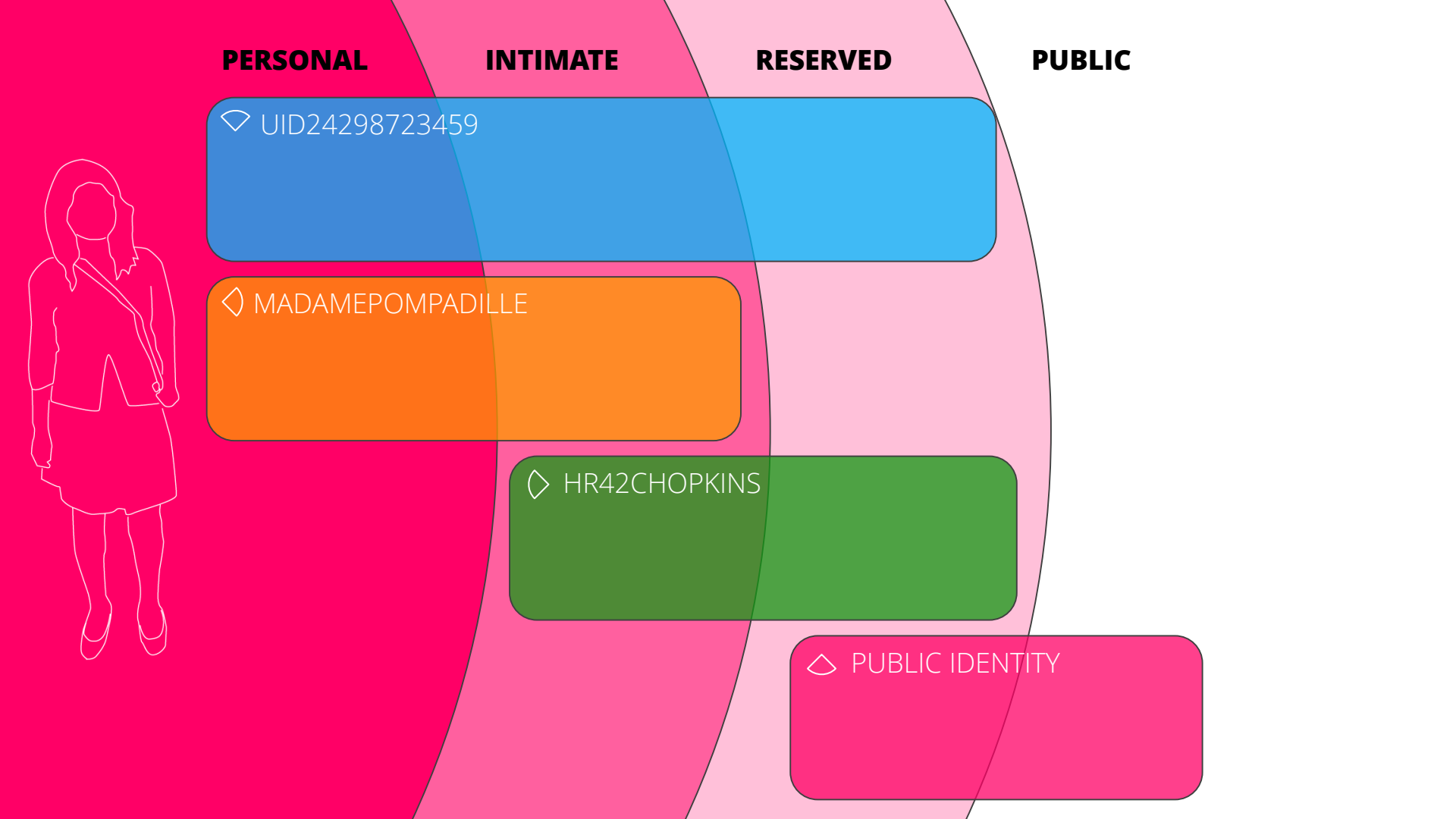
unique ID

PUBLIC

object info



combining identity and privacy spheres


PERSONAL
INTIMATE
RESERVED
PUBLIC
UID24298723459
MADAMEPOMPADILLE
HR42CHOPKINS
PUBLIC IDENTITY

PERSONAL

INTIMATE

RESERVED

PUBLIC

UID24298723459

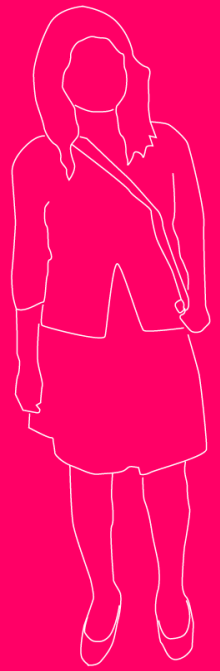
right to manage use

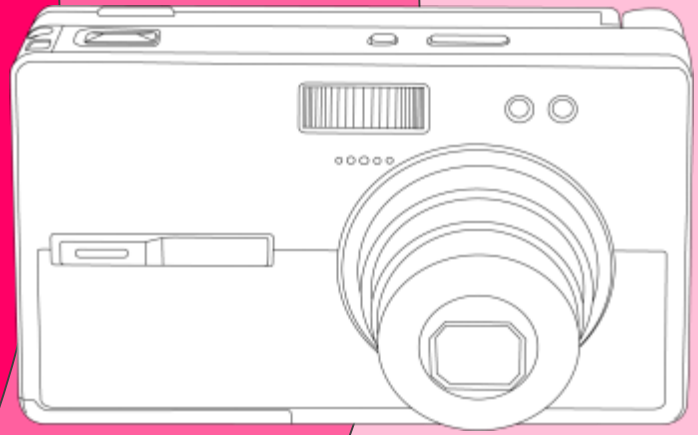
right to use

sensor data

unique ID

object info





PERSONAL

INTIMATE

RESERVED

PUBLIC

UID24298723459

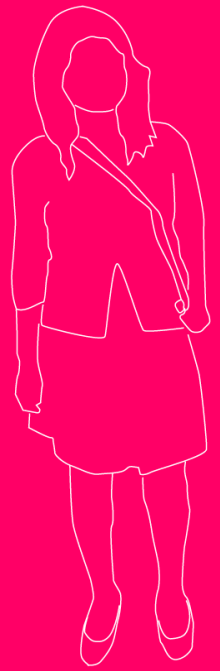
right to manage use

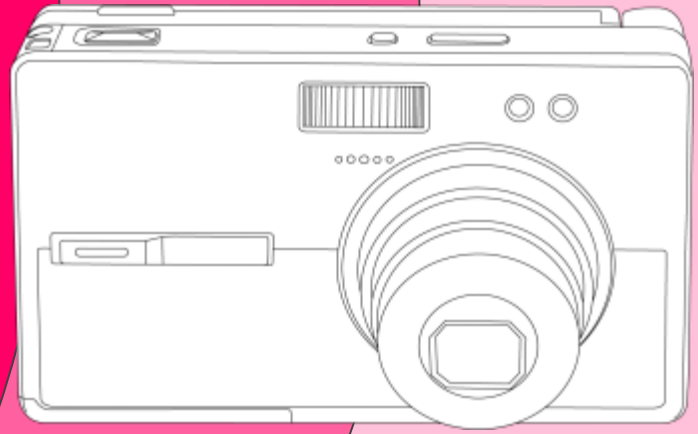
right to use

sensor data

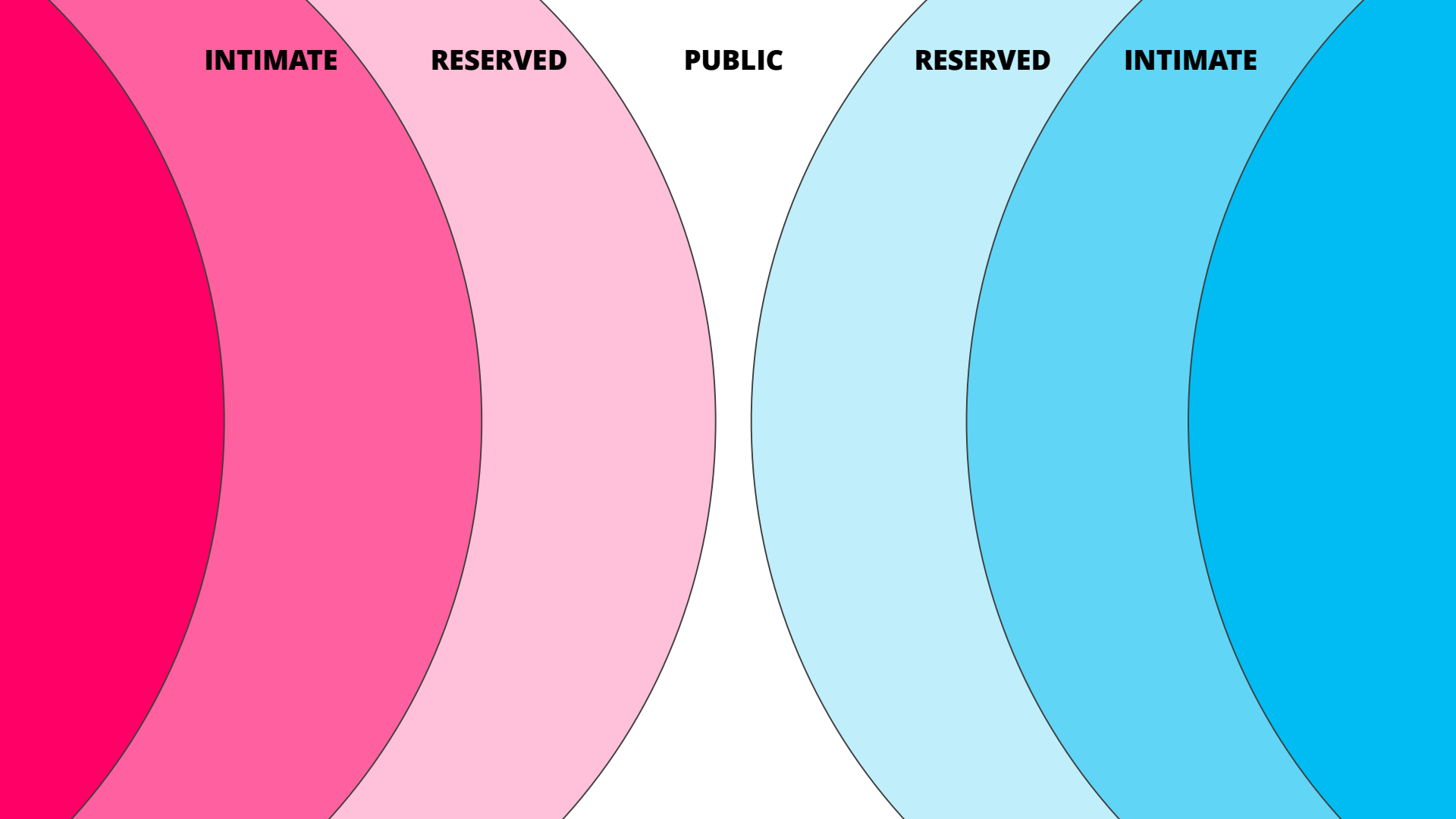
unique ID

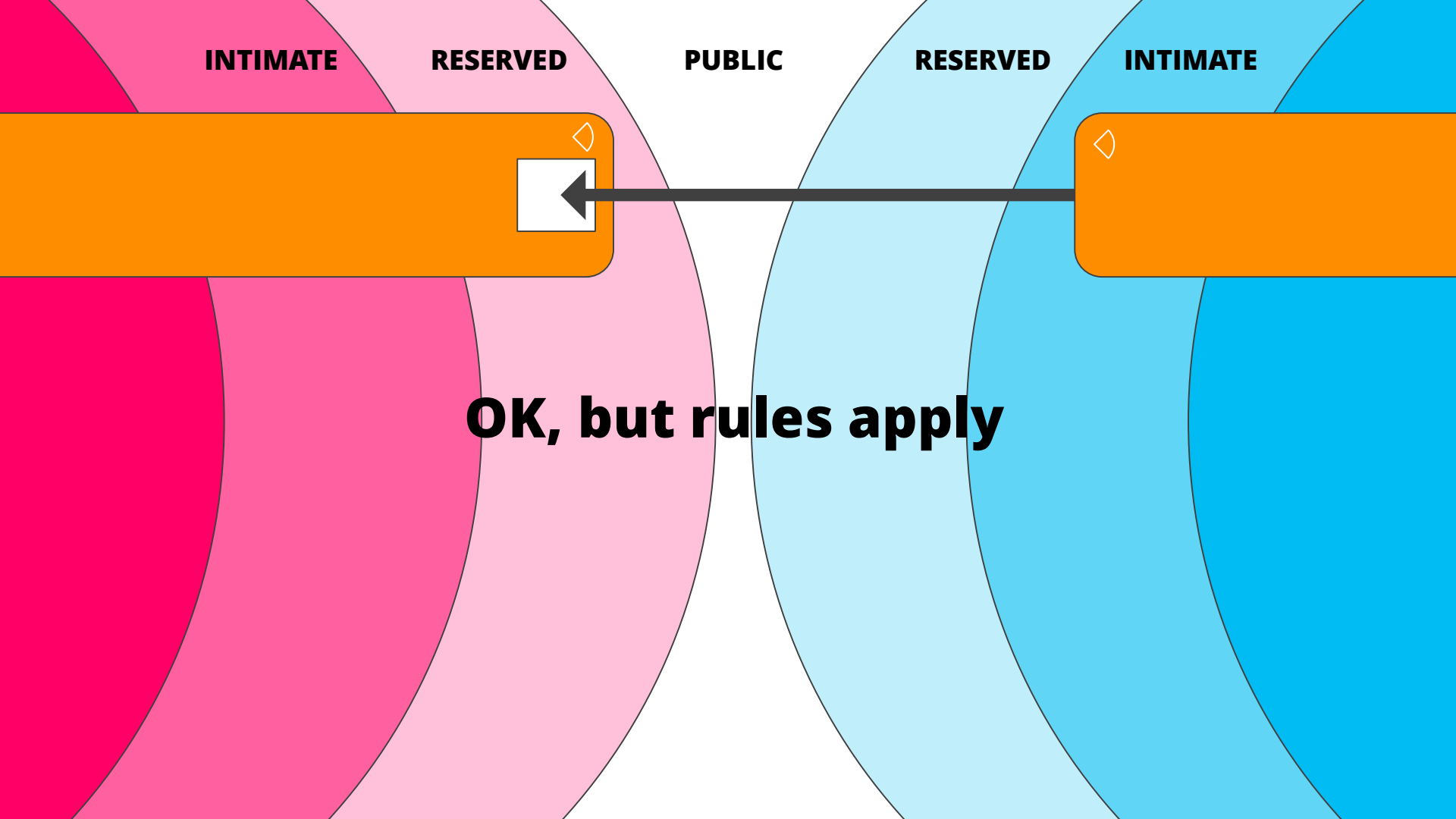
object info

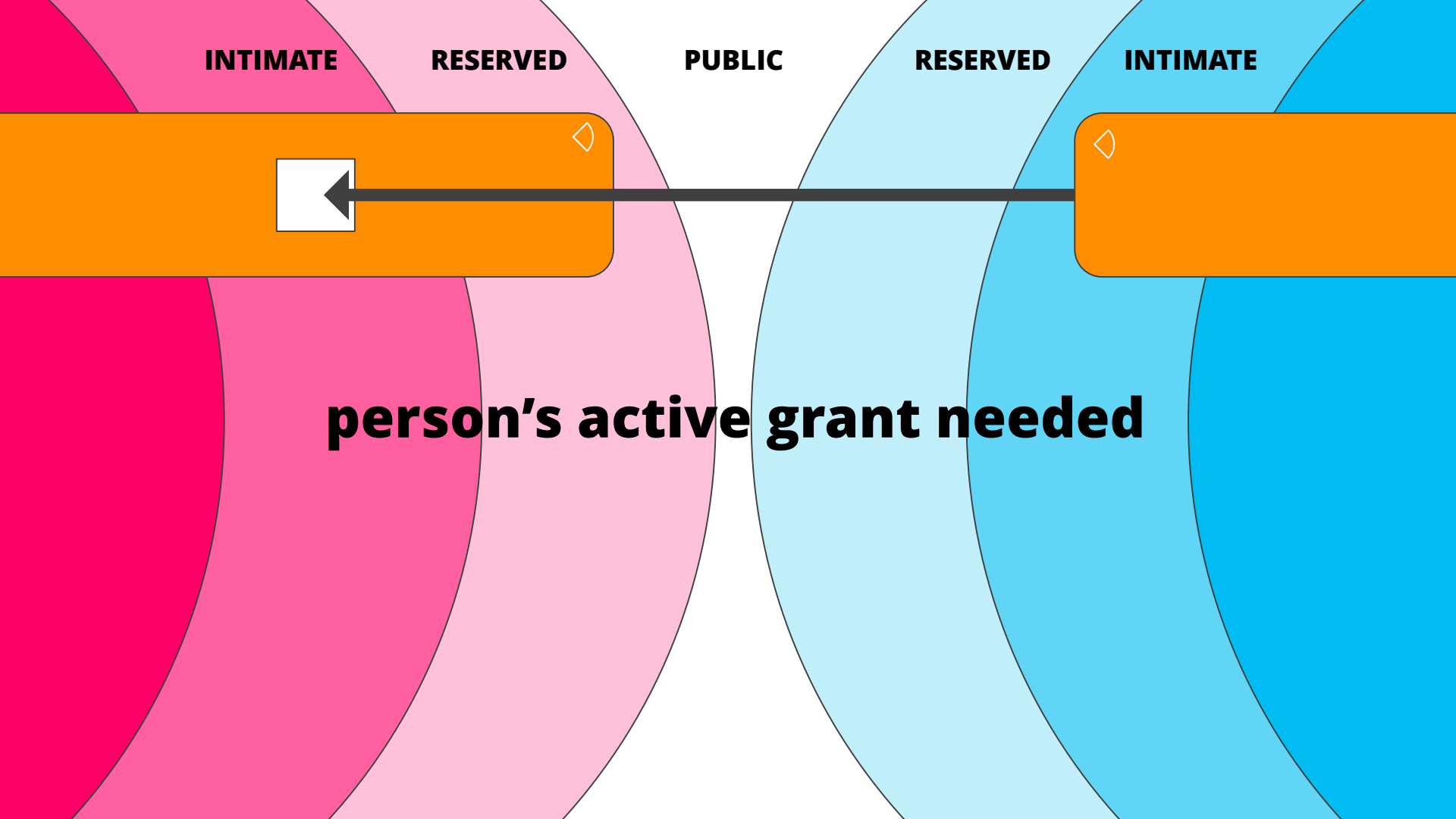


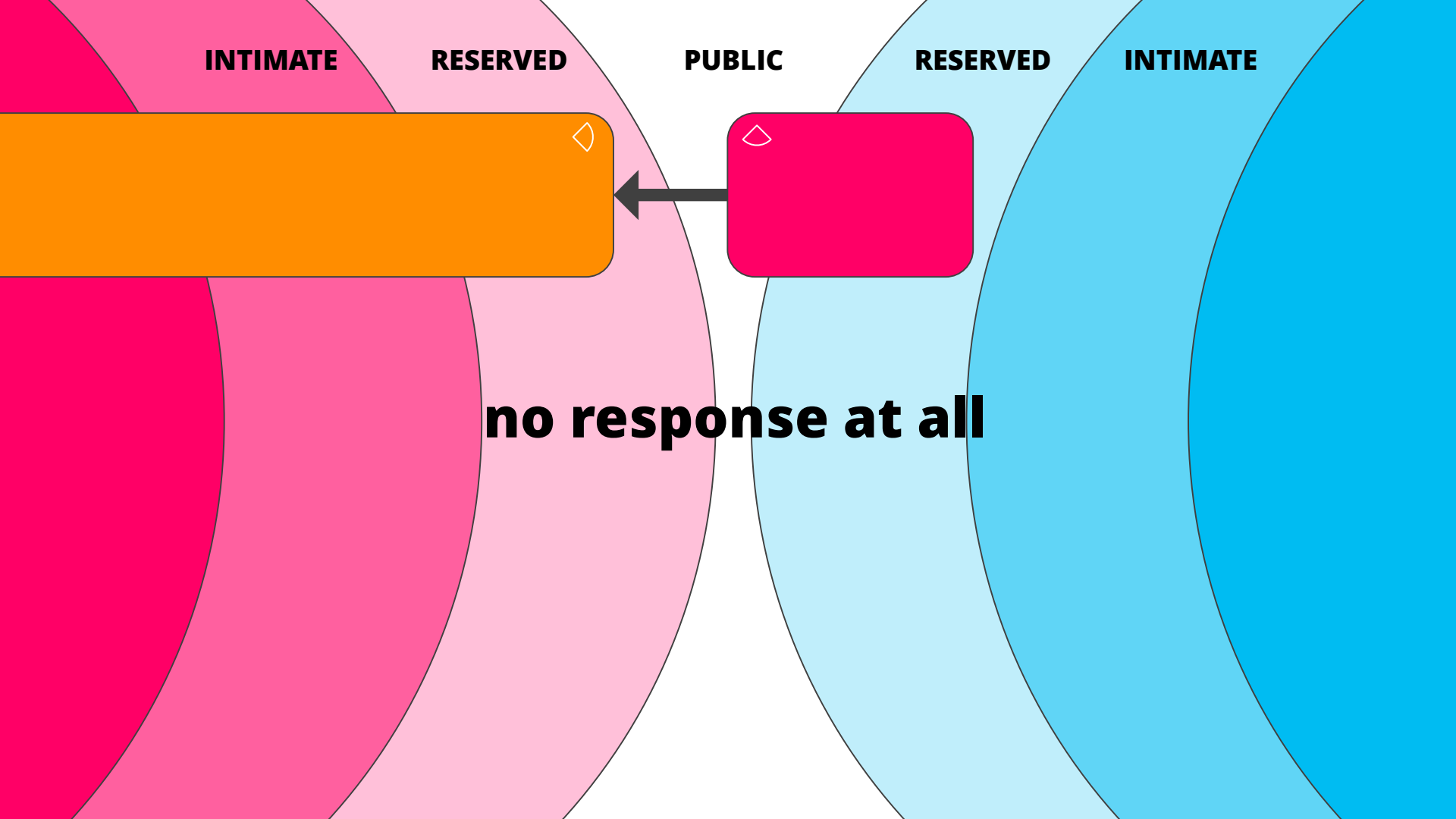


IDENTITY COMMUNICATION


INTIMATE
RESERVED
PUBLIC
RESERVED
INTIMATE

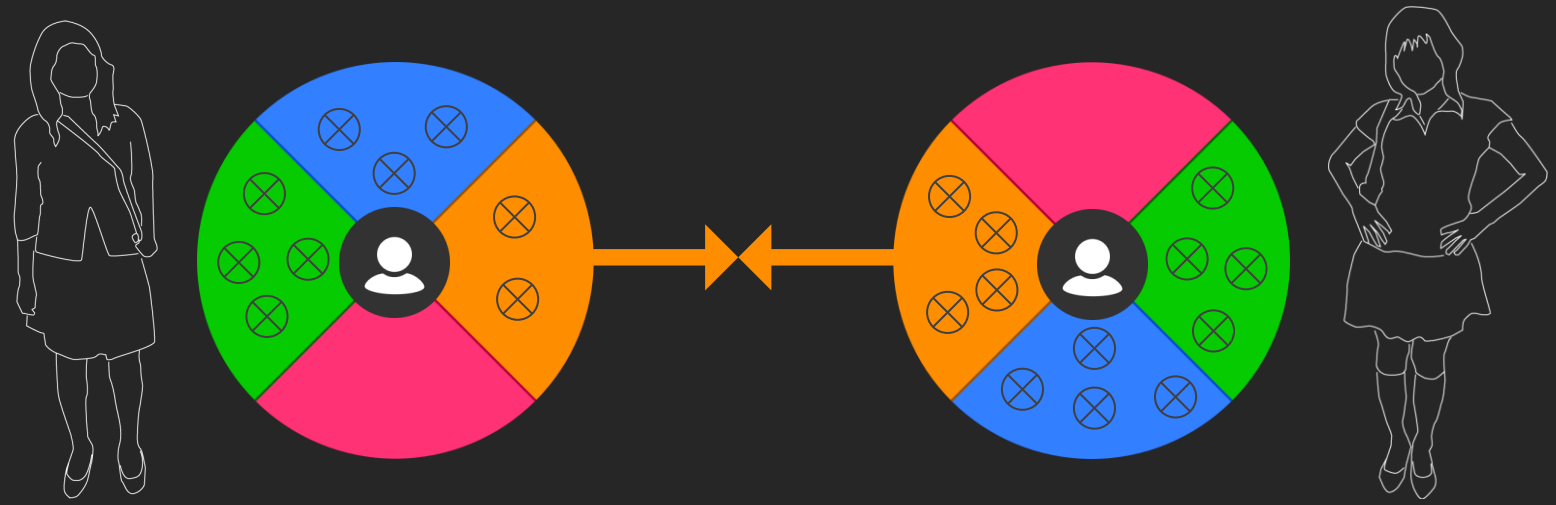

INTIMATE
RESERVED
PUBLIC
RESERVED
INTIMATE
OK, but rules apply


INTIMATE
RESERVED
PUBLIC
RESERVED
INTIMATE
person’s active grant needed


INTIMATE
RESERVED
PUBLIC
RESERVED
INTIMATE
no response at all

“I CREATED THE WWW TO CONNECT PEOPLE NOT MACHINES“

Sir Tim Berners-Lee



CONCLUSION

privacy is vital to society

and a human right to everyone

the IoT will happen

and this is a great thing

we need to solve those privacy issues

and I‘m sure we can

Photo by Rick Schwartz on flickr.com. Licensed under cc-by-nc 2.0.