# Challenges of the Internet Of Things: Possible Solutions from 3D Privacy, Crowd-privacy, ADS Labelling

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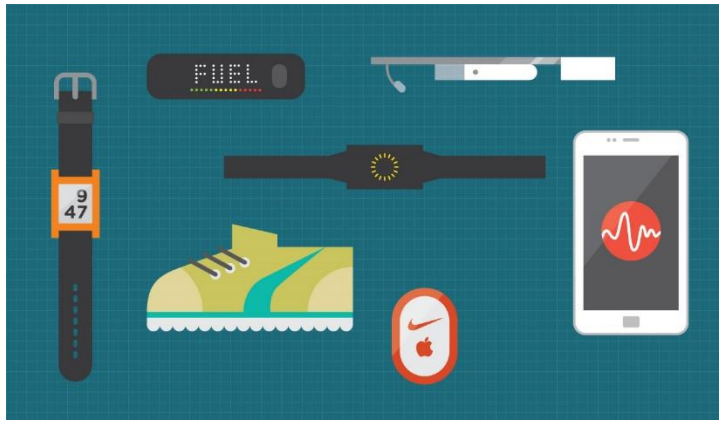
# IOT PERVASIVENESS WITH RESPECT TO DAILY LIFE




Wearable computing

Waiting for Internet of Blood?

Smart home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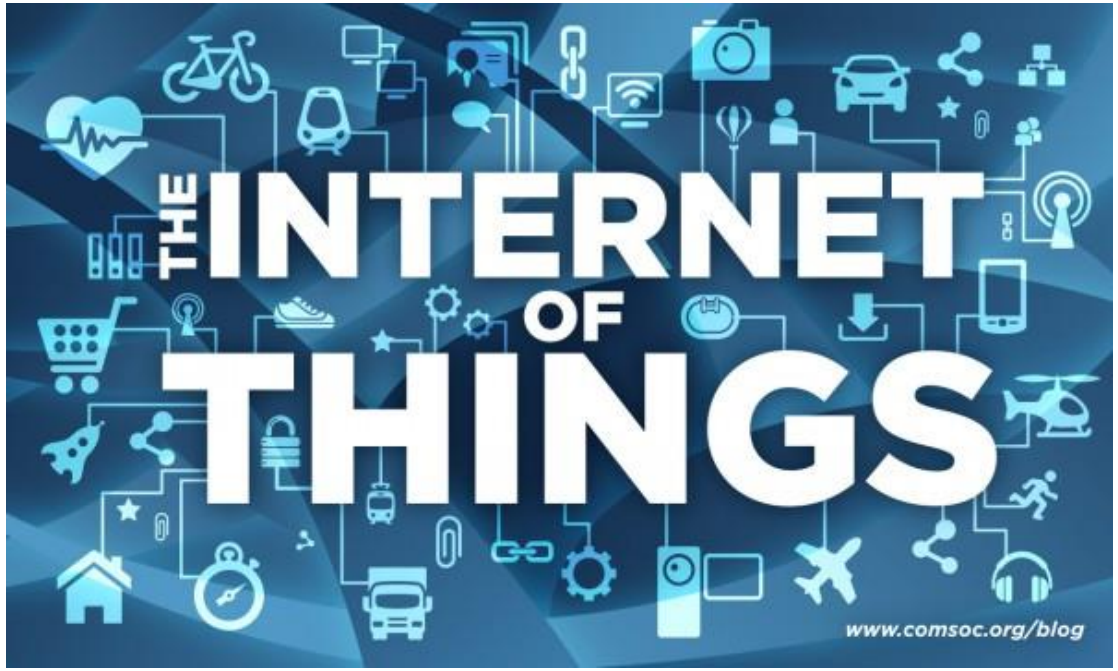
Big Data Collection

Environmental sensing

Artificial Intelligence




Profiling/ Monitoring

Intersubjective and interobjective data transfer

Physical Identification

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# What are the risks?

Profiling without consent/awareness

Interaction with other objects in order to analyze information and generate cross-profiles

Re-identification of a data subject thanks to the unique identifier assigned to the object

Loss of control of the personal data/processing

**Impacts on unaware data subjects and complications of objects AI ("Digital Subconscious")**

Unlawful data transmission between different subjects/objects

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# IoT players: a new dimension

**BEFORE IOT -> Data subject n.1** = **active – interactive** – in principle, the GDPR (and also Directives 95/46/EC and 2002/58/EC) identifies an «interactive» data subject

**AFTER -> Data subject n. 2 as a NON-USER** = the IoT implies the involvement of **passive subjects** which are out of reach (in terms of information to be given and of consent to be collected)

**BEFORE IOT -> Controlling/processing actors** = data **controller** and data **processor** that are **active subjects**

**AFTER -> NON-SUBJECTS as controlling/processing actors** = data controllers and processors are also, merely, objects -> **WHAT ABOUT ACCOUNTABILITY OF THINGS?**

# “Data protecy”, not only a legalese neologism

Reconsideration of the concepts of privacy and data protection, merging them together – as the continuous processing of personal data (protected according to art. 8 of the Charter of Fundamental Rights of the European Union, “CFREU”) is also by default accompanied in IoT by the invasion of what, according to art. 7 of the “CFREU”, we define as private and family life. The concept of “personal sphere” has changed. It has lost its classic features, opening its doors to the first inanimate objects which now are able to act independently in terms of the information they reveal and can even talk to each other, exchange data that they have acquired. Smart “things” are objects which are precisely part of the “personal sphere” which carry risks of “interference” with respect to the individual’s privacy. Thanks to the intrinsic characteristics of the IoT, we have witnessed the reunification of the rights that Articles 7 and 8 of the CFREU had divided: the Internet of things requires that data protection and privacy are fused together in order to protect the individual from the activities of connected and interconnected intelligent objects that invade the private sphere (even the human body) while processing personal data.

## Data protecy =

## physical + virtual personal info protection

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# Possible solutions - 1. 3D privacy

Often we cannot choose not to be a data subject and to remain invisible to sensors of the smart object.

The protection of the personal sphere and its “material data” is becoming three-dimensional

3D privacy consists in adopting also physical security measures, empowering users and non-users as data subjects with material tools in order to self-control over their information and to self-defend from data collection in IoT open environments. It is the use of other objects or other physical elements in order to avoid capture of personal information, shielding the individual from such collection,

restoring the privacy of the individual sphere and keeping the data protect.

## 3D privacy = a type of data protecy self-enforcement

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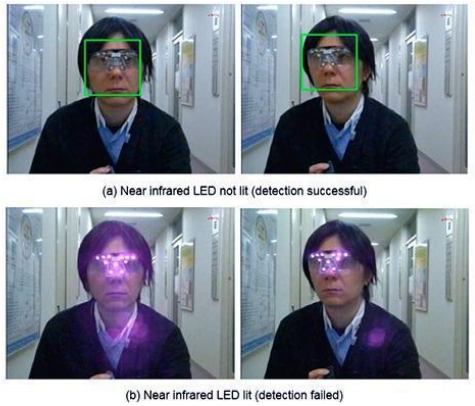
# 3D privacy: examples




Privacy visors


Anti-paparazzi foulard

Personal antiradar

Privacy screen

Biometric passwords


iPhone press-code

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# Possible solutions - 2. Crowd-privacy

Privacy Flag H2020 Project: to enable users in order to exchange information/awareness and to organize self-defense measures from cyber/privacy threats on line and in IoT environments

UNITY MAKES STRENGHT

Crowdsourced tools, certification schemes to monitor and check IoT applications security and privacy

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# Possible solutions - 3. A “Food&Drug approach” and ADS labelling

Thinking about the impacts -> Disclosing what data processing was behind a targeted banner or DEM

Like food&drug labelling, detailing ingredients and preservatives, users should be enabled to discover and understand why they are receiving a specific ads

Online users deserve the max possible **transparency** when receiving online "food for thoughts", such as ADS and other contents. Users shall know what they are taking and why, understanding criteria which are behind a digital content targeting. It would be possible to adopt a **code of conduct** according to Article 40 of the GDPR, combining it with a web-based **label-add-on**, to improve both the **accountability** of the digital content-providers and the **users’ awareness over IoT Big Data-driven impact** on their life.

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# Thank you!

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