

Consumer
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Definitions of IoT

IoT Advisory Board

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ISO/IEC – Consensus Online Definitions

“IoT device

“*entity* of an *IoT system* that interacts and communicates with the physical world through *sensing* or *actuating*

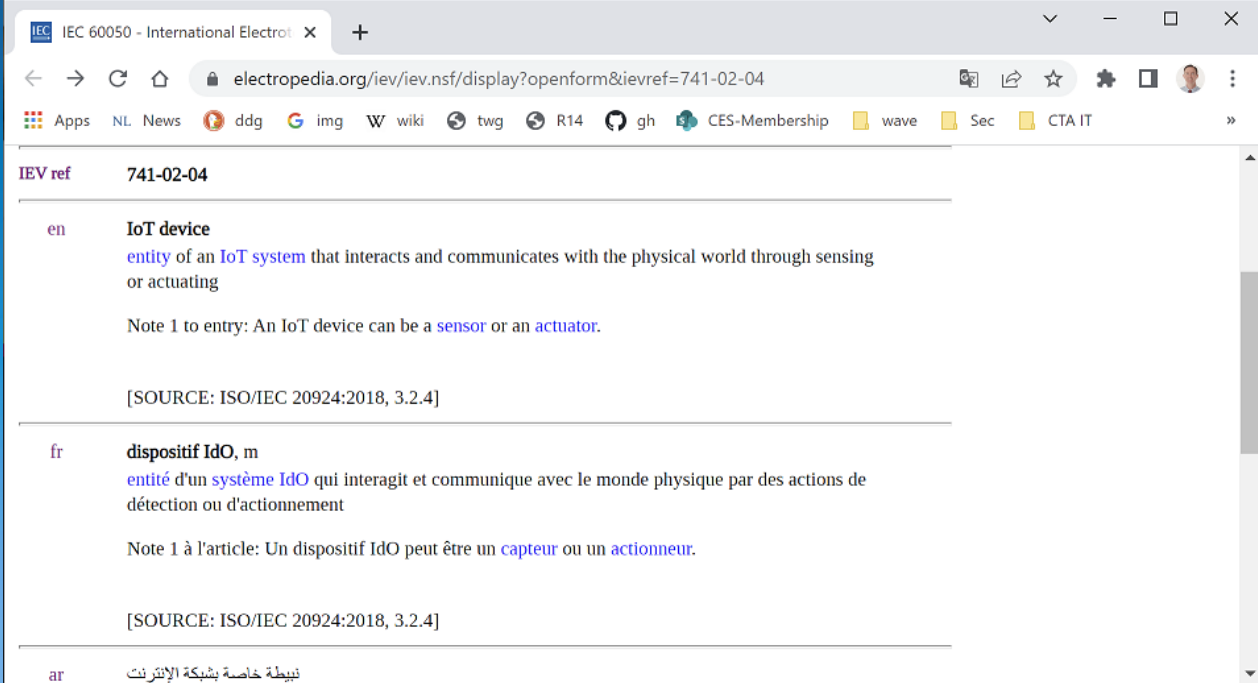
“Note 1 to entry: An IoT device can be a sensor or an actuator.

“[SOURCE: ISO/IEC 20924:2018, 3.2.4]”

ISO/IEC technical standards use the master dictionary where possible.

Example:

Draft ISO/IEC 27402, “*Cybersecurity – IoT security and privacy – Device baseline Requirements*”, @3.2 “IoT Device”



The screenshot shows a web browser window displaying the IEC 60050 - International Electrotechnical Vocabulary (IEV) online dictionary entry for 'IoT device'. The browser address bar shows the URL: electropedia.org/iev/iev.nsf/display?openform&ievref=741-02-04. The page content is as follows:

IEV ref 741-02-04

en **IoT device**
entity of an IoT system that interacts and communicates with the physical world through sensing or actuating

Note 1 to entry: An IoT device can be a sensor or an actuator.

[SOURCE: ISO/IEC 20924:2018, 3.2.4]

fr **dispositif IdO, m**
entité d'un système IdO qui interagit et communique avec le monde physique par des actions de détection ou d'actionnement

Note 1 à l'article: Un dispositif IdO peut être un capteur ou un actionneur.

[SOURCE: ISO/IEC 20924:2018, 3.2.4]

ar **نبيطة خاصة بشبكة الإنترنت**

3.2

IoT Device

entity of an IoT system that interacts and communicates with the physical world through sensing or actuating

Note 1 to entry: An IoT device can be a sensor or an actuator

[SOURCE: ISO/IEC 20924]

NISTIR 8425 Consumer Profile for IoT Products

- NISTIR 8425

- Comes from the NIST IoT Cybersecurity Program team
- Is specific to “Consumer IoT”
- Was published in Sept 2022

“NIST describes an IoT device as

computing equipment with
at least one transducer (i.e., sensor or actuator) and
at least one network interface [IR8259].”

“All IoT products contain at least one IoT device and may contain only this product component.”

“In many cases, the IoT product may be purchased as one piece of equipment (i.e., the IoT device) but still requires other components to operate, such as a backend (e.g., cloud server) or companion user application on a personal computer or smartphone.”

Consumer Technology Association Perspective on Defining IoT

- The Consumer Technology industry generally accepts the NIST structure:
 1. An IoT device has networking, computing, and transducer capabilities.
 2. Classical IT equipment is excluded:
 - ❌ Laptops/tablets
 - ❌ Servers
 - ❌ Routers
 - ❌ Smartphones
- We have observed that there is some “crossing the lines”
 - E.g., consumer routers (“CPE routers”) *may* be considered as “IoT” to accomplish some limited objectives

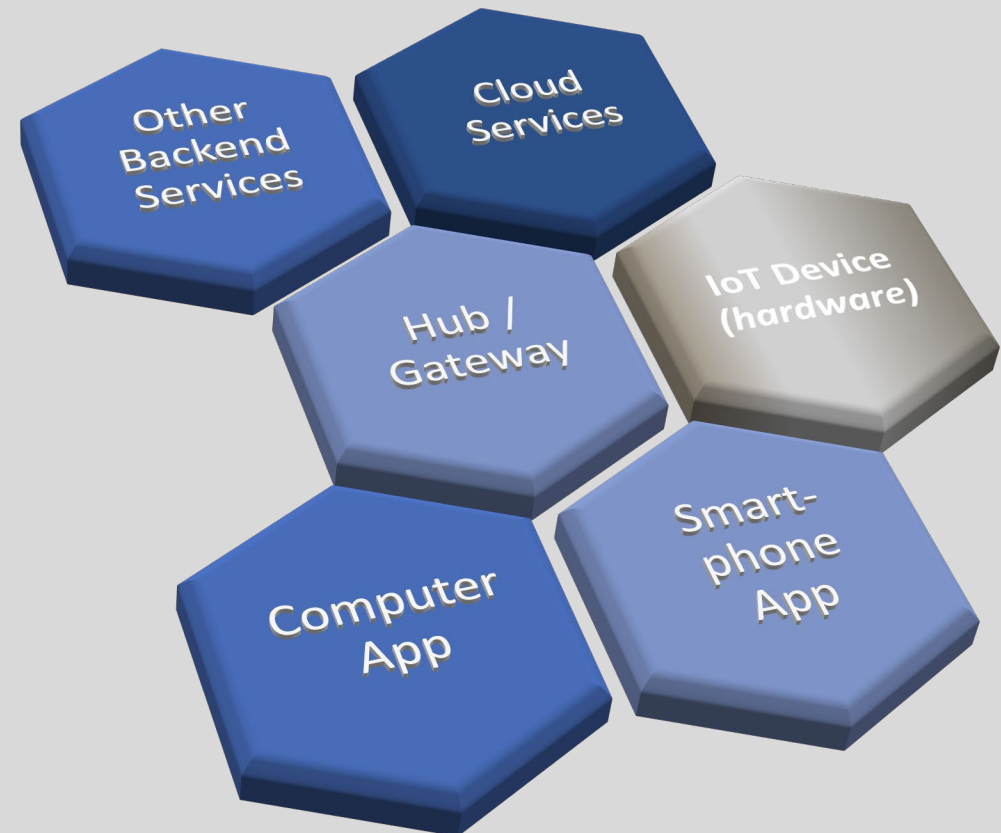
The IoT Product “...requires other components to operate”

“NIST describes an IoT *device* as

- computing equipment with
- at least one transducer (i.e., **sensor** or **actuator**) and
- at least one network interface [IR8259].”



IoT Product



Suggestions

1. Agree to stay within common assumptions of “IoT”
 - E.g.: A server in a data center with ambient heat sensing...not IoT
2. Align to the NIST definition of IoT Product and IoT Device
3. Recognize limitations of the compute-network-transducer boundary

Proposal for Scope of IoTAB

1. Formally cite NIST IoT Product and IoT Device definitions from [NISTIR 8425] and [NISTIR 8259].
2. Highlight NIST clarification, “not IT e.g. not laptops, smartphones, etc.” [NISTIR 8259]
3. If we discuss other device categories, be explicit about why it is wrapped up with “real” IoT (e.g., CPE routers, home printers)

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