CONNECTED ENVIRONMENTS

Duncan Wilson, Leah Lovett

Intros – Internet of Things – Walk – Arduino – Brief – Lunch – Build

BUILDING BRIDGES

Internet of Things, Sensor Networks + Cyber Physical Systems

Unusual observation
Theory of why,
Evidence,
Prove,
Remove

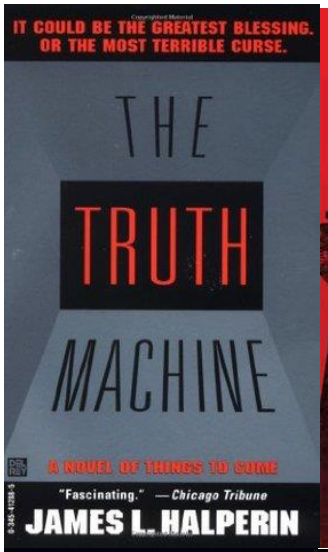
What is technology?

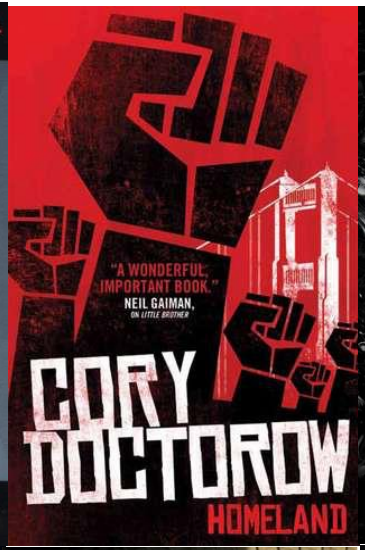
“Technology is anything that wasn’t around when you were born.”
Alan Kay, Computer Scientist

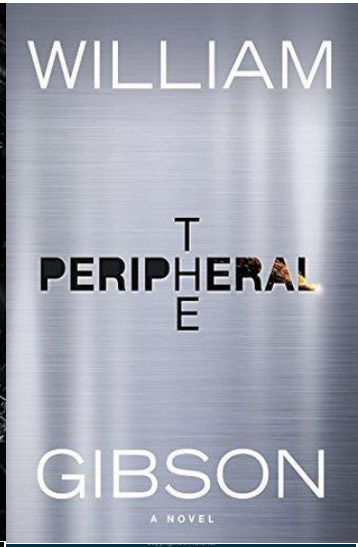
Sci-fi, Solar Punk

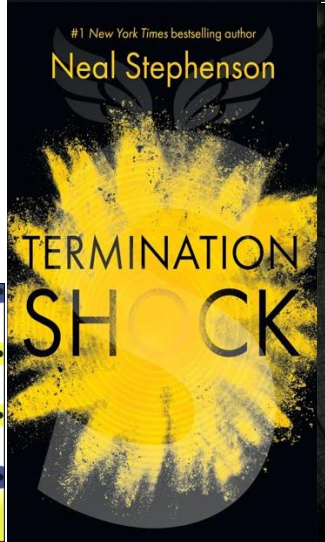
“The future is already here – it's just not evenly distributed.”

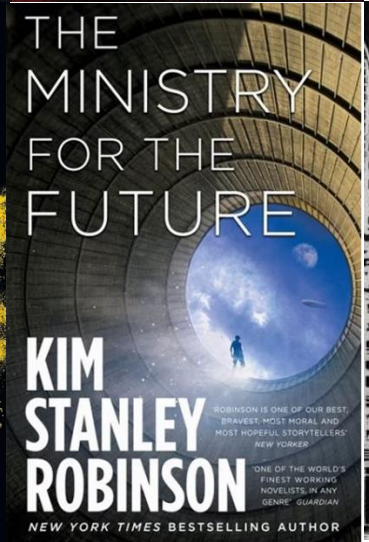
William Gibson
The Economist, 4/12/03

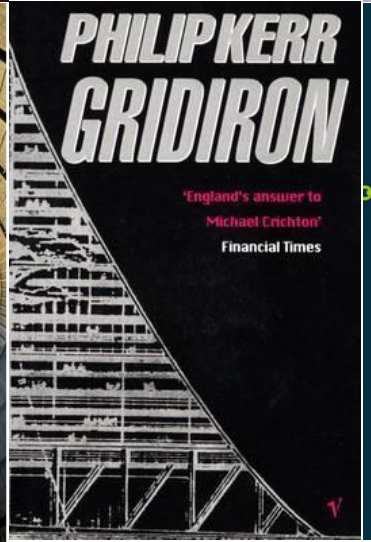


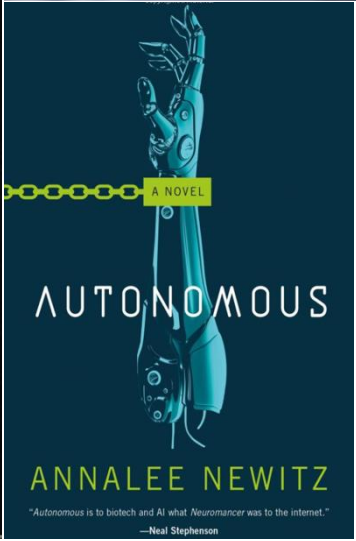


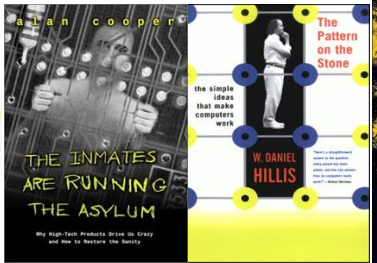












What is a Connected Environment?

Physical Object

+

Sensors / Actuators / Controllers

+

Network Connectivity

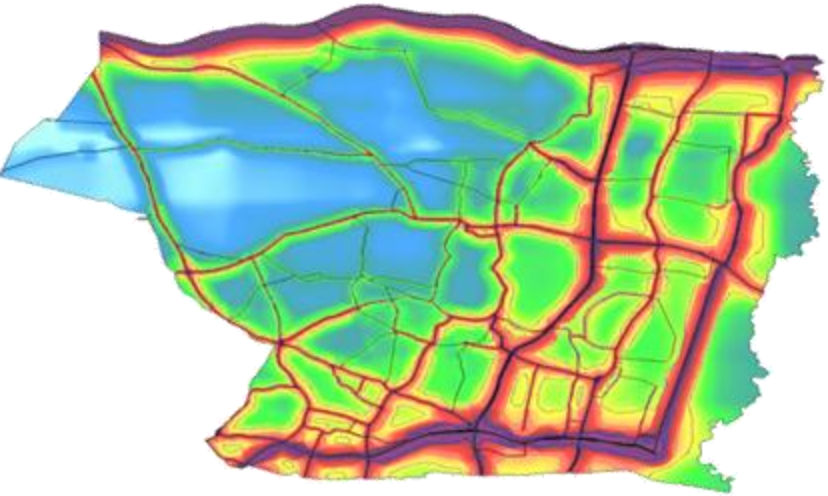
=

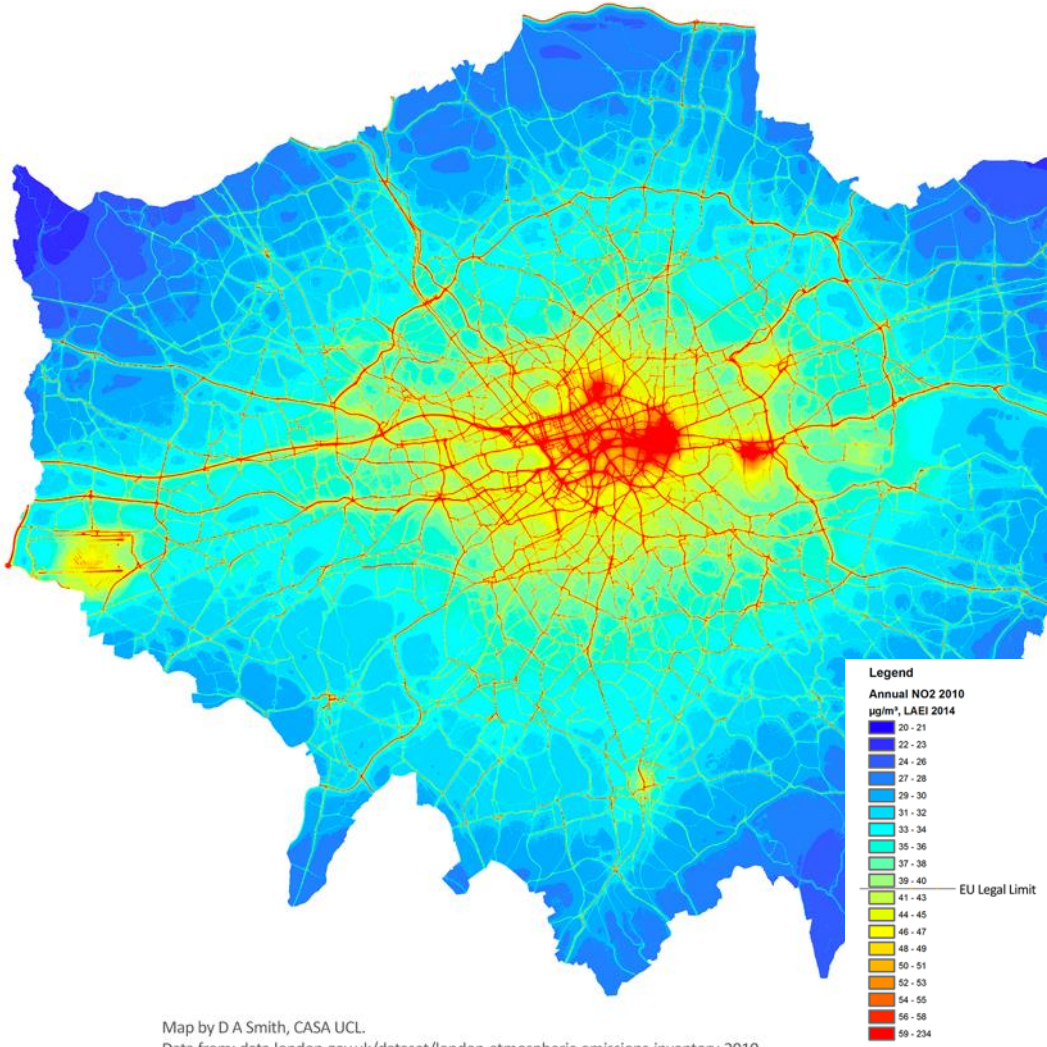
“Internet of Things”

Wikipedia

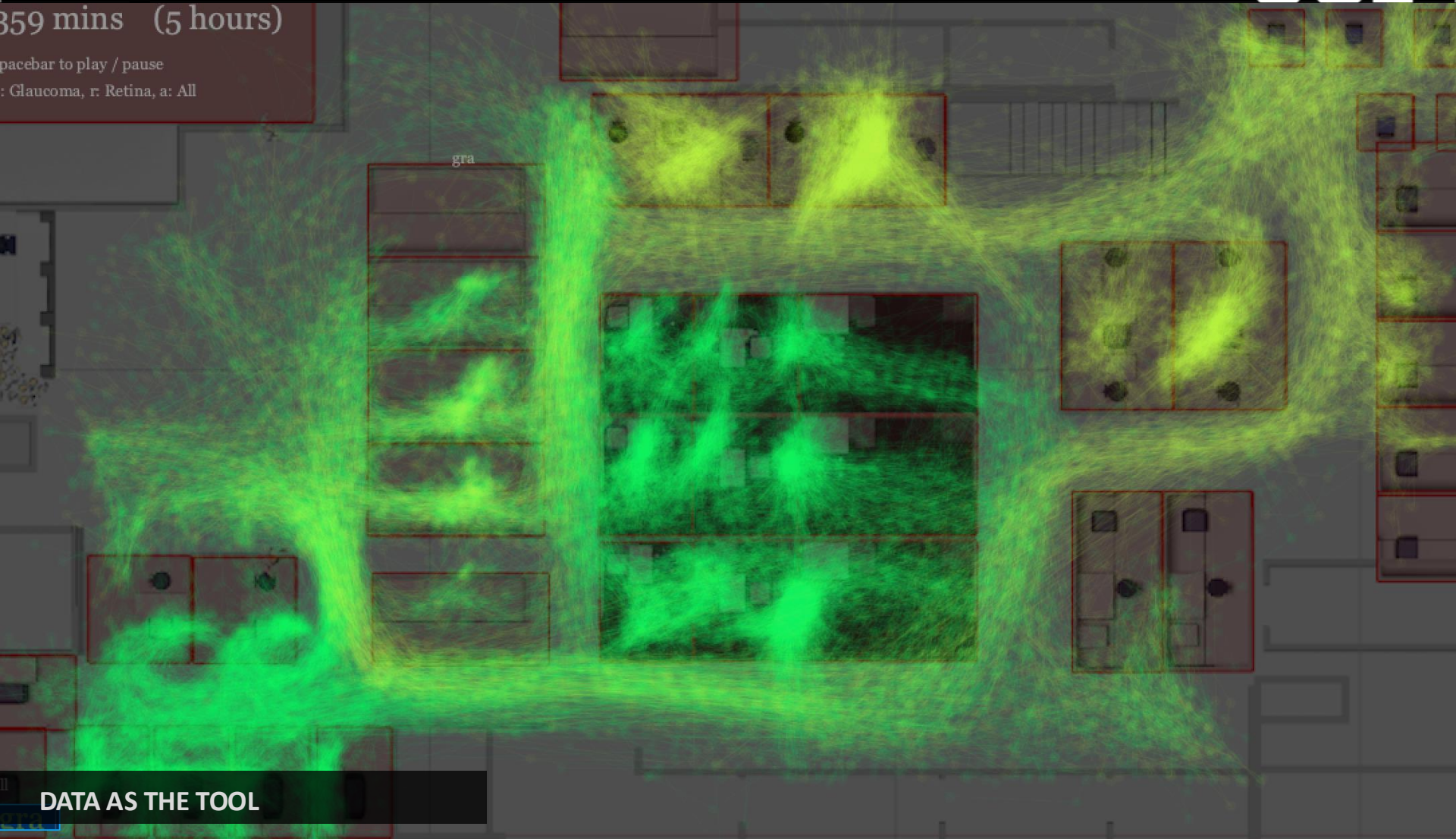
p.11, McEwan + Cassimally 2014

The Internet of things (IoT) is the network of devices such as vehicles, and home appliances that contain electronics, software, sensors, actuators, and connectivity which allows these things to connect, interact and exchange data.





Map by D A Smith, CASA UCL.
Data from: data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2010



DATA AS THE TOOL

CONNECTING THE DOTS, OBSERVING PATTERNS

AUGMENTING OUR UNDERSTANDING

12:01 PM | MONDAY, NOVEMBER 20 2017

VISUALISATIONS

REAL TIME TUBE & RAILS

UNDERGROUND OVERGROUND DLR

REAL TIME BIKE STATIONS

120 is the amount of free bikes in this area.

136 is the amount of empty slots in this area.

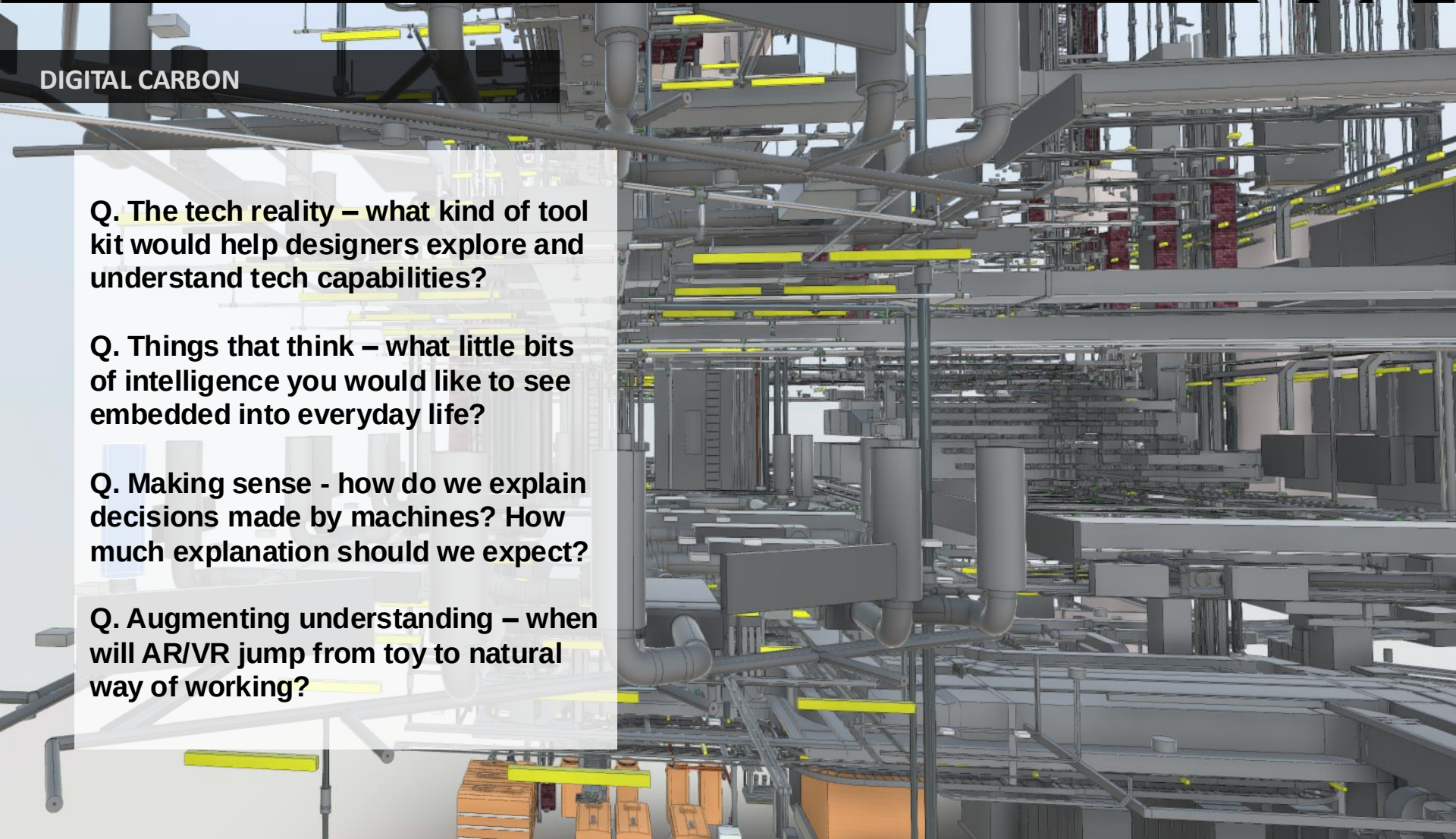
REAL TIME BUSES

3 is the amount of buses in the network in this area.

75 is the amount of bus stops in this area.

vilo VIRTUAL LONDON

DIGITAL CARBON



Q. The tech reality – what kind of tool kit would help designers explore and understand tech capabilities?

Q. Things that think – what little bits of intelligence you would like to see embedded into everyday life?

Q. Making sense - how do we explain decisions made by machines? How much explanation should we expect?

Q. Augmenting understanding – when will AR/VR jump from toy to natural way of working?

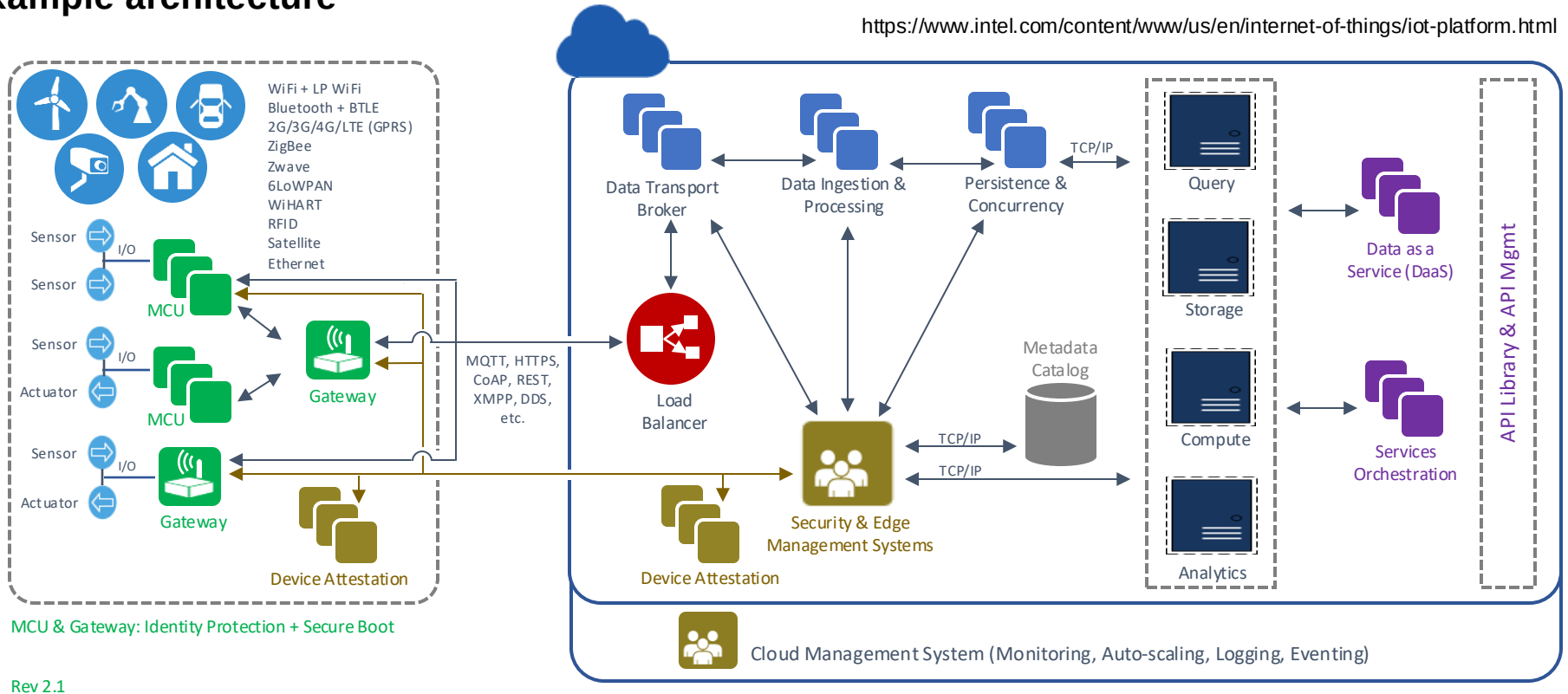
EDAC
1747

DIGITAL (PWM~)
UNO
ARDUINO

Building blocks

Example architecture

https://www.intel.com/content/www/us/en/internet-of-things/iot-platform.html



MCU & Gateway: Identity Protection + Secure Boot

Rev 2.1