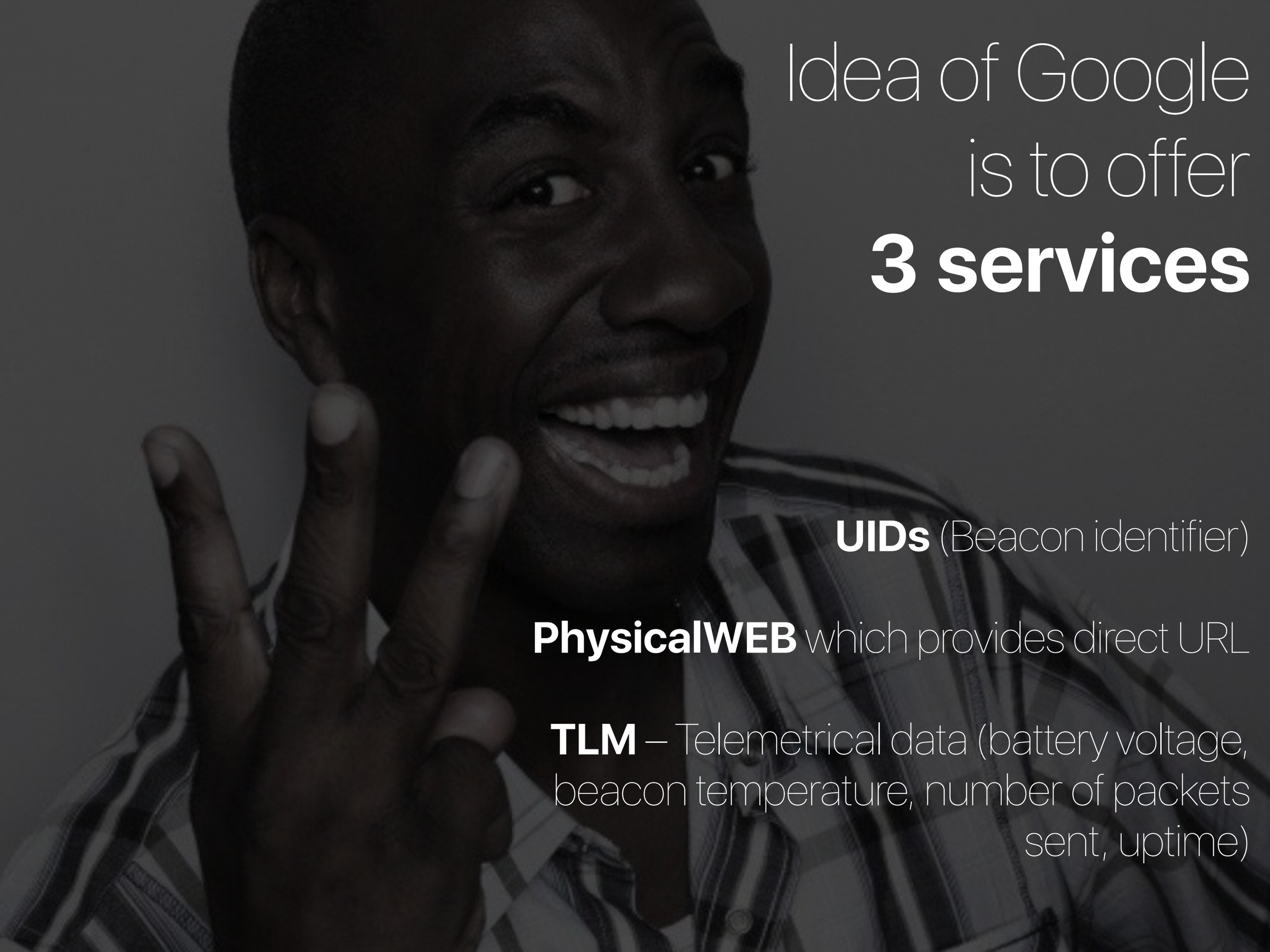
Google **Eddystone** and extensions

Vision by **LogicMachine** Foundation



Idea of Google
is to offer
3 services

UIDs (Beacon identifier)

PhysicalWEB which provides direct URL

TLM – Telemetrical data (battery voltage, beacon temperature, number of packets sent, uptime)

How do beacons operate **currently?**

It is **one-side responder** without back-channel (receiver) operating **on batteries**

e.g. Produced by companies like Estimote or Pushmote

How does our approach **differ?**

We use **bi-directional communication** in our solution; we can do background scan and communicate with other beacons in parallel

This allows to **make content-dependent responder** (e.g. if a man with BLE wearable is maximally close to the beacon, it will show one URL, if the distance is further sway – another URL)

Beside beacon over BLE we've added also **beacon over IP** network (Zeroconf, Avahi)

We have the **ability to receive URL in two ways** – over IP network and over BLE networks

Our solution is made with **permanent powering**

We use Power-over-Ethernet technology for powering (**combined communication and power**)

This makes the beacons maintenance-free (**no battery control or replacement needed**)

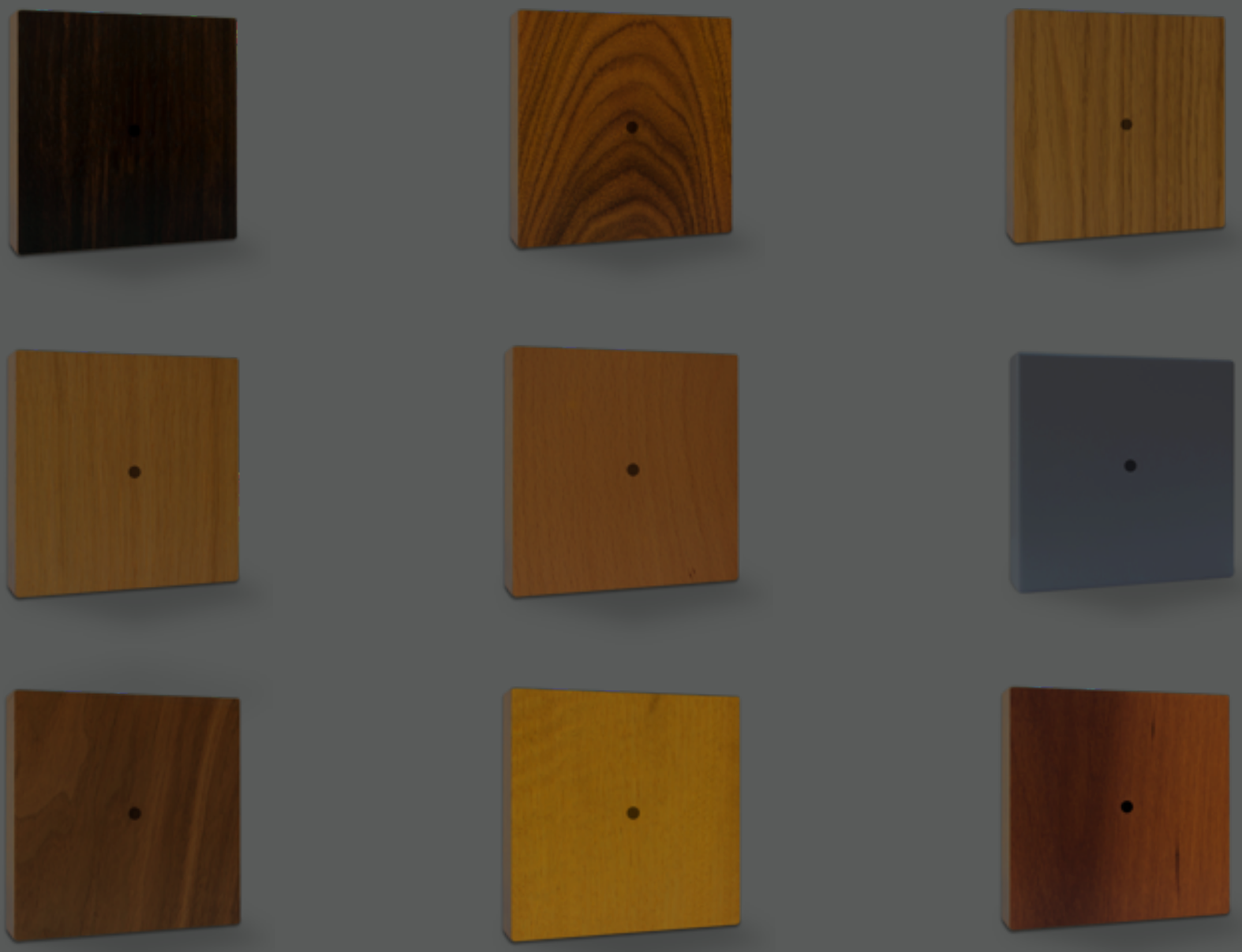
We have also developments with **small form-factor**, similar to what others market players have

Besides, our idea is that the main device (connected permanently) can work as **provisioning server for other beacons** who are in visibility zone – receives URL and sends it to another devices (in way of broadcast or other)

We are working also on optical Beacon development which **doesn’t require any wireless or wired connections** to provide information

We can prepare more information further on if interested..

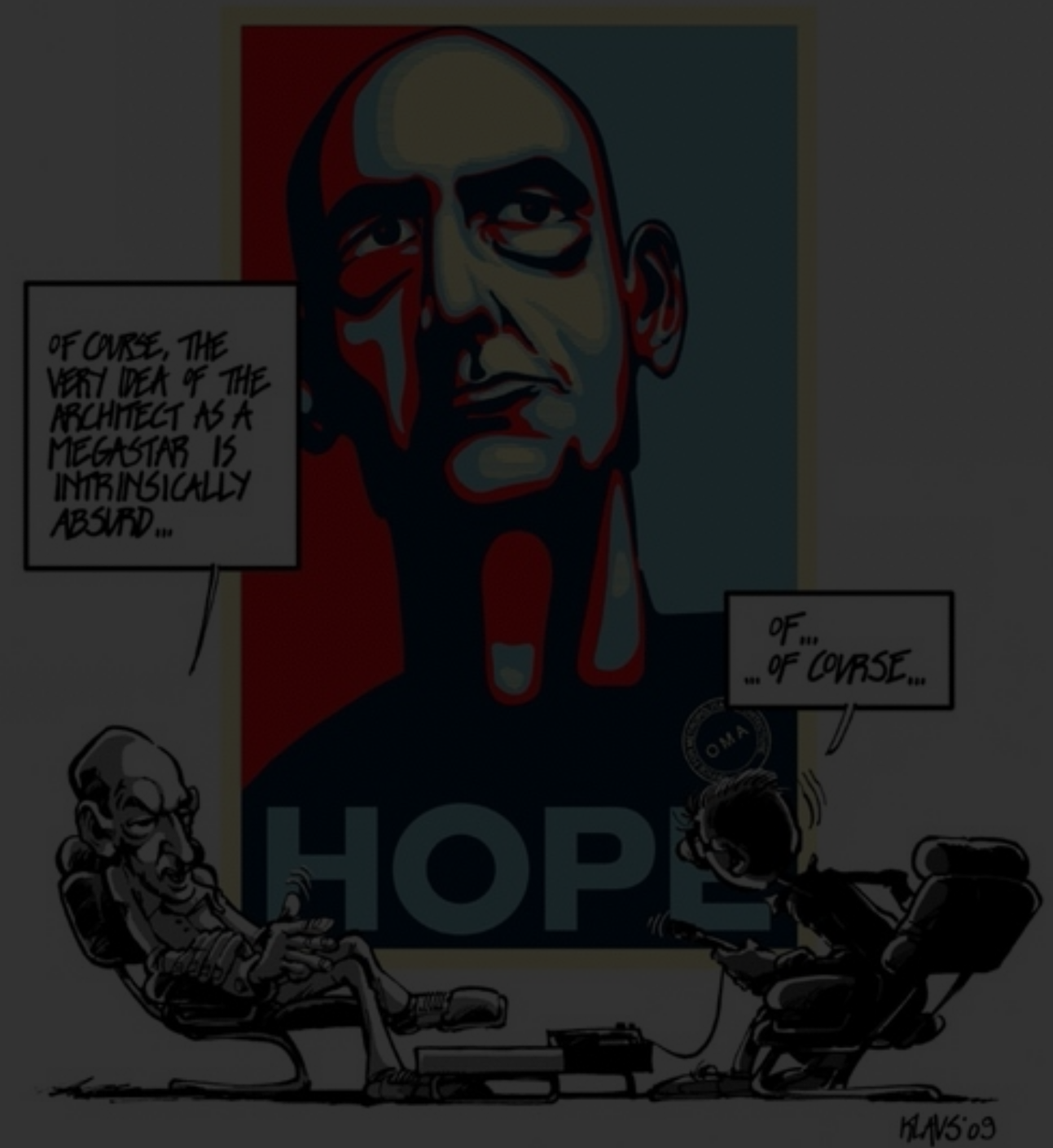
Beacons based on LogicMachine **Ambient**



As mentioned, our device operates as transceiver (**transmit + receive**) – we can communicate with BLE sensors and in parallel transmitting beacon

Thanks to this we can provide **context-based URL** e.g. if such device is installed on the beach and has humidity and light sensors, we can **provide different advertisement** when there is day+rain, evening+rain, day+sun etc.

A scenario is a sentence
which contains an event
that triggers an action



Event -> Context (temp., week day, holidays, etc.) -> Content

Our vision about Beacon devices

If these devices have permanent connection (they are not moved), ideally is **to have convergence device** – besides beacon there is more functionality – sound or RGB notifications, push-button, thermostat etc. (example further from LM Ambient specification)

Thanks to this the **cost per function can be very small**; plus, it can be extended

Sensors

VOC for control of air quality
Air Quality – with greater CO part thank VOC (it can be used where there are CO sources like ovens)
Temperature which allows to make smart thermostat
Humidity
Barometer
Ambient light sensor with light spectrum sensor
Gesture control (swipe right/left, up/down, front in/out; works starting from 20cm)

The **other** way of notification

RGB LED lighting which allows to use device as ambient light source as well as interface device. E.g. red flashes means some security trigger

Built-in **beeper** allows to make sound notifications

Built-in **indicator / locator** of swap zone

Communication
interfaces

Ethernet with **PoE** powering

Bluetooth module

1-Wire interface for I/O extension

Optional: EnOcean; WiFi, GSM, Z-Wave
etc. through USB stick

Integration in major building
automation and IT
technologies

KNX
ModBus
BACnet
SIP
AllJoyn
MQTT
etc.

Design

Form-factor: we plan to have close to standard **pushbutton**

We put it on a wall (and not inside) because:

- we have **sensors** which requires air flow
- integrated **ambient lighting**

We plan to offer enclosures made of exotic wood, natural wood, gold/silver plating, painted and **other designs**

Lets build the right future **together**

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