

# Quel accompagnement pour vos projets IoT ?



# Timeline : Panorama de l'IoT

2015

2016

2017

2018



Préface :  
**Thierry Sachot**



Eolane

Postface :  
**Nicolas Demassieux**



Orange

Version 1



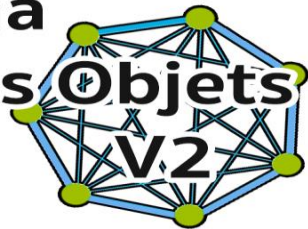
2000

Version 2



1000

# Panorama de l'Internet des Objets



DigitalPlace

FUSION LABS

Internet des objets et services Cloud



SIERRA  
WIRELESS™



orange™



TELEGRAFIK

Services connectés intergénérationnels

OCCITECH  
// INGENIERIE WEB



PANTZ  
VOCATS

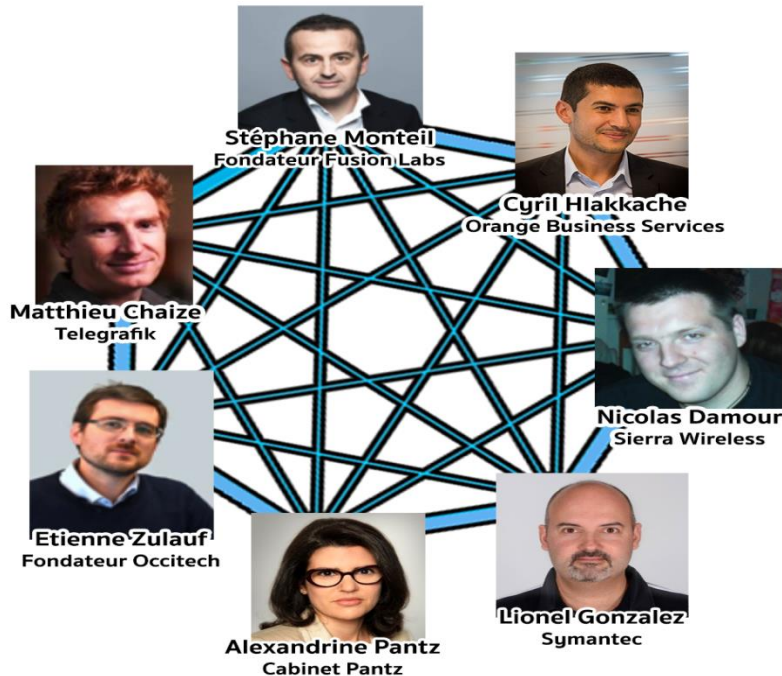
Auteurs :

2017

Cyril Hlakkache - Orange,  
Stéphane Monteil - Fusion Labs,  
Matthieu Chaize - Telegrafik,  
Etienne Zulauf - Occitech,  
Nicolas Damour - Sierra Wireless,  
Lionel Gonzalez - Symantec,  
Alexandrine Pantz - Cabinet Pantz.

Préface de :  
Thierry Sachot  
Président de la Cité de l'objet connecté

Postface de :  
Nicolas Demassieux  
Senior Vice President, Orange Labs Research



Merci d'avoir pris le temps de parcourir  
la **version 2** du livre blanc :  
«**Panorama de l'Internet de Objets**» !

# Introduction (1/2)



*“Les projets d’objets connectés sont désormais passés dans une étape plus mature. Les industriels ont dépassé cette année le cap du Proof of Concept et entament leur transformation numérique grâce à l’IoT.”*

**Emmanuel Mouton**





# V1



## Le marché et sa dynamique

segments, chaîne de valeur, acteurs, adoption moteurs B2C B2B et facteurs, ROI : optimisation, nouveaux services, .

## Les freins

Standards, maturité usages, gestion devices, business model, ROI, énergie, sécurité, juridique, plateforme et confiance.

## Les technologies

Architecture, devices, passerelles, réseaux, infrastructures, applications, la connectivité, standards, hybridation, perspective

## Méthodologie projet

Multidisciplinaire, hardware network software, embarqué, sécurité..., Data driven et CDO, démonstrateur, POC et projet... agile et équipe intégrée.

## Stratégie des données

Management de la donnée existant, service et prédictif, stratégie

## Formation

# Introduction (2/2)



**Emmanuel Ruiz**



*“L’IoT aujourd’hui se confronte à 3 challenges majeurs :*

- 1. **La sécurité** (valable aussi pour l’IoT industriel),*
- 2. **L’interopérabilité** (valable pour l’IoT industriel),*
- 3. **L’UX** (user expérience).“*



V2



### Germany bans smartwatches for kids and asks parents to destroy them

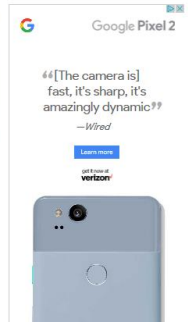
'prohibitive listening devices'

by Micah Singleton | @MicahSingleton | Nov 19, 2017, 1:00pm EST

[SHARE](#) [TWEET](#) [LINKEDIN](#)



Photo by Vjeran Pavic / The Verge



# La sécurité

cross solution E2E, management update, authentication, éducation, déclaratif...

# Le Juridique

protection relative aux données, responsabilité de l'objet...



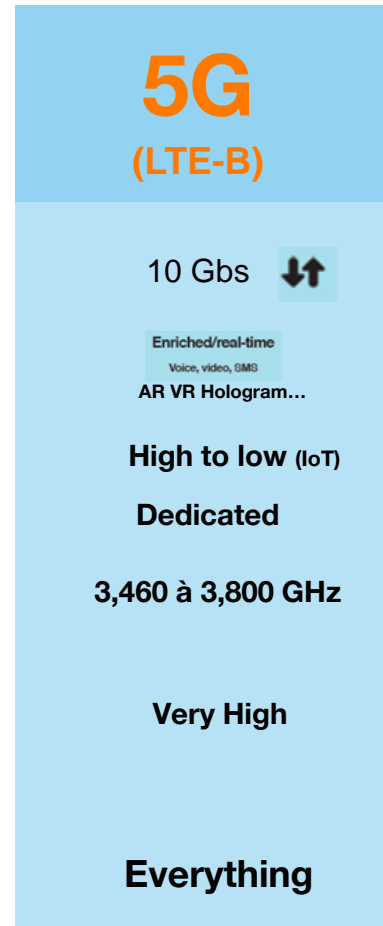
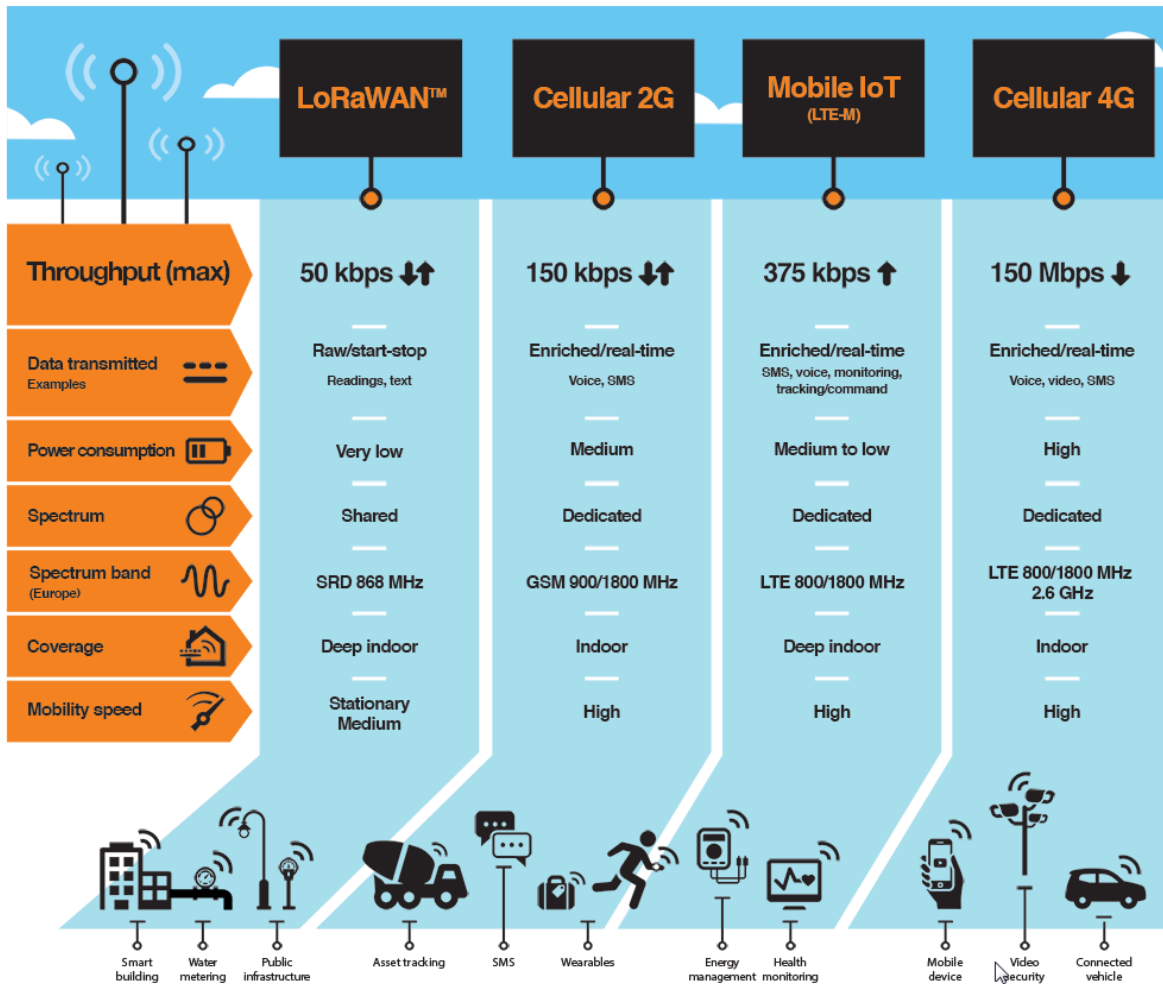
# Download the white paper

DigitalPlace > Services > Livre Blanc

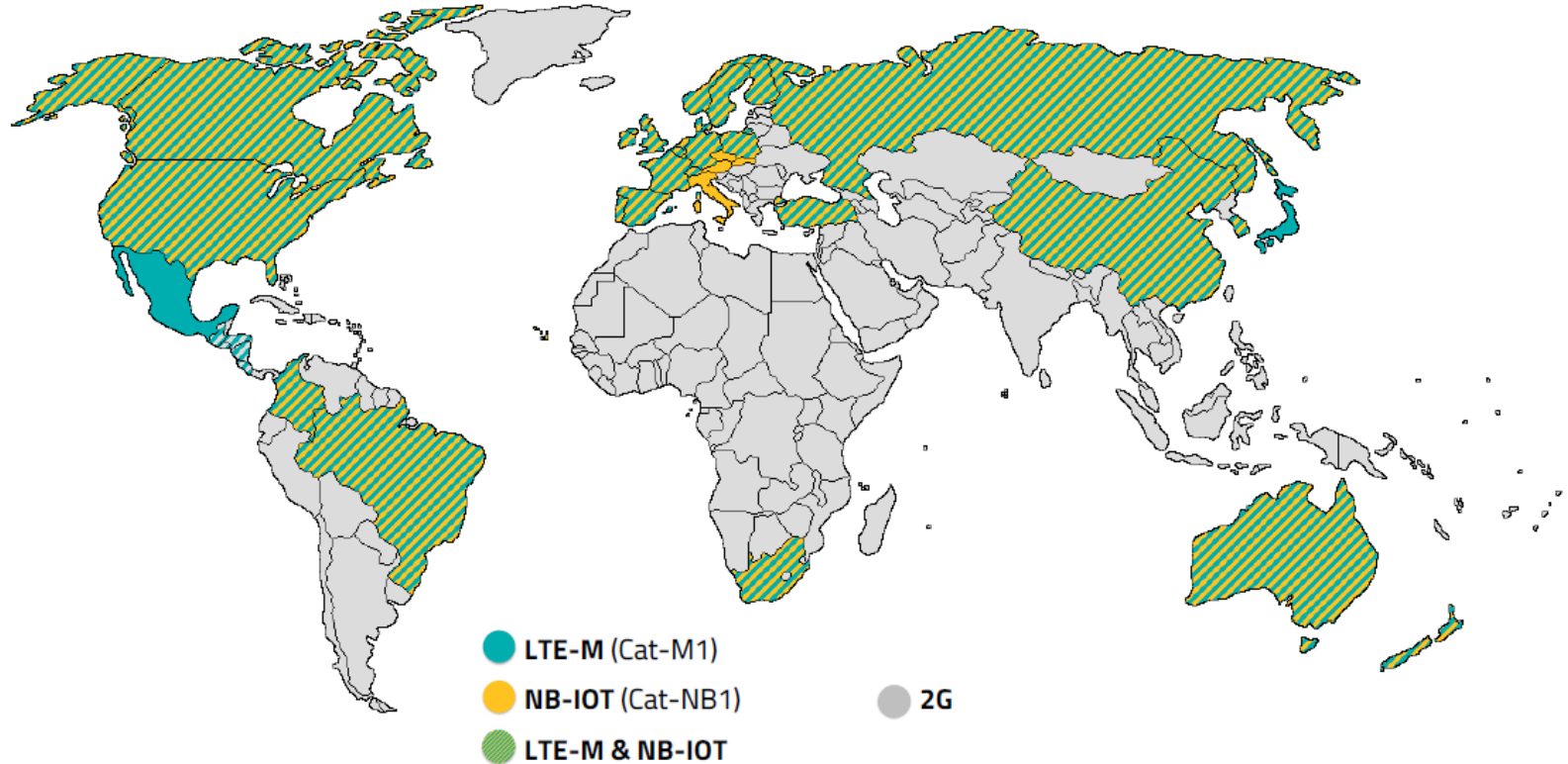
<https://www.digitalplace.fr/livre-blanc-iot/>

A screenshot of the DigitalPlace website. The header shows the 'DigitalPlace' logo and navigation links: 'DigitalPlace', 'Communauté', 'DP Academy', 'Services', 'Actualités', 'Jobs', and a search icon. The main content area is titled 'TÉLÉCHARGEMENT DU LIVRE BLANC IOT'. Below the title, there is a paragraph of text: 'Télécharger la version 2 du livre blanc «Panorama de l'Internet des Objets» Pour télécharger le livre blanc, compléter le formulaire ci-contre. Les informations fournies par le formulaire de téléchargement sont réservées à l'usage interne de DigitalPlace et des entreprises rédaatrices du livre blanc, à savoir : Fusion Labs, Ocoitech, Orange Business Services, Sierra Wireless, Telegrafik. Vos données ne seront pas transmises à des tiers.' To the left of the text are social media icons for Twitter, LinkedIn, Facebook, and RSS. Below the text is a large blue box labeled 'FORMULAIRE' containing a white box with the text: 'Télécharger la version 2 du livre blanc "Panorama de l'Internet des Objets"'. The entire screenshot is framed by a thin black border.























# TOMORROW, These are the MLoT networks at mid-2018

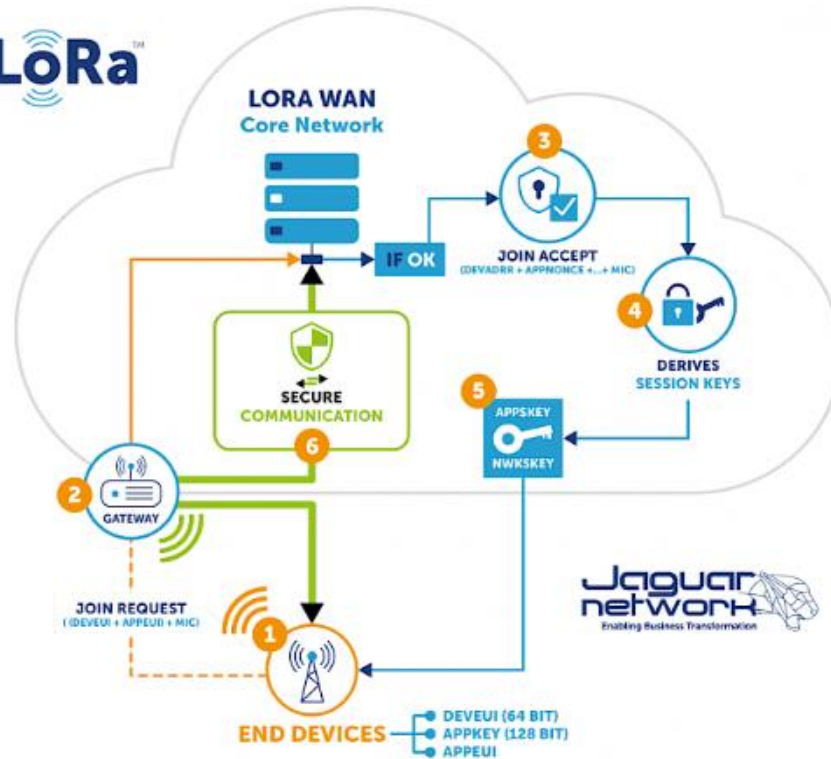


Credit : Nicolas Damour, Sierra Wireless

An open-standard LPWA technology	LoRa key strengths	LoRa verticals & use cases
<ul style="list-style-type: none"><li>✓ Networks &amp; devices available now</li><li> Specifications of LoRaWAN MAC by LoRa Alliance</li><li> Interoperability via LoRa Alliance &amp; Orange certification programs</li><li> Ongoing large-scale deployment in France</li><li> Regional bands: Europe (868 MHz), Asia (923 MHz) &amp; USA (915 MHz)</li><li> Supported by a growing worldwide ecosystem</li></ul>	<ul style="list-style-type: none"><li> Lowest power consumption</li><li> Low-cost modules</li><li> Long-range &amp; indoors coverage</li><li> Dedicated deep indoor via nano gateways</li><li> Bi-directional (250 bps-50 kbps)</li><li> Geolocation</li><li> Fast &amp; easy network rollout</li><li> Native end-to-end encryption</li></ul>	<ul style="list-style-type: none"><li> <b>Smart city</b><ul style="list-style-type: none"><li>• Connected rest area</li><li>• Smart city deployment in Grenoble</li></ul></li><li> <b>Smart industry</b><ul style="list-style-type: none"><li>• Asset tracking</li><li>• Predictive maintenance</li><li>• Supply chain</li></ul></li><li> <b>Agriculture</b><ul style="list-style-type: none"><li>• Soil monitoring</li><li>• Humidity/temperature tracking</li></ul></li><li> <b>Smart home</b><ul style="list-style-type: none"><li>• Metering (water, energy)</li><li>• Security</li></ul></li><li> <b>Retail</b><ul style="list-style-type: none"><li>• Logistics</li></ul></li></ul>

<https://partner.orange.com/>

Un *duty cycle* de 1% veut donc dire que pendant les 3600 dernières secondes, un dispositif ne doit jamais avoir émis pendant plus de 36 secondes au total. Classe A (économe) à classe C (en écoute permanente)



<https://www.jaguar-network.com/actualites/lorawan-in-a-nutshell-2-internet-of-things-iot/>








**DEVEUI** : a Unique ID per device, can't be changed.

**AppEUI** : a unique ID per application, 64 bits.









**AppKey** : secret key to encryption between the object and the network, could be changed, 128 bits.

# LTE-M





## LTE-M, a 3GPP-based IoT solution

-  Standardized evolution of 4G LTE
-  Inband deployment in existing LTE band 800/1800 MHz
-  Implemented via 4G networks software upgrade
-  SIM & eSIM\* encryption and authentication
-  Compatible with existing M2M data roaming model
-  Short roll-out time and low deployment costs
-  Deployment within Orange Europe footprint to start in 2018

## LTE-M key strengths

-  Cat-M1 device support
-  Low cost modules (Target ~ 5\$)
-  Power optimisation features: Power Saving Mode, eDRX
-  Extended coverage & deep indoor
-  Real-Time Bi-directional link
-  Half/full mode (max 380 kbps/1 Mbps)
-  High speed mobility support & connected mode handover
-  VoLTE support\*

## LTE-M verticals & target use cases

-  **Smart territories & industry**
  - Smart metering
  - Vending machine management
  - Industrial M2M
  - Critical assets tracking
-  **Automotive & logistics**
  - Fleet management
  - Onboard telemetry
-  **Smart home**
  - Remote control
  - Security (incl. video)
-  **Personal IoT**
  - Remote trackers
  - Wearables

\*Basic VoLTE enabled by LTE-M standards to be implemented in secondary deployment phase

<https://partner.orange.com/>



Orange is already upgrading its 4G networks to deploy LTE-M, starting with its Belgium and Spain affiliates by end-2017, before extending to the rest of the Group's European footprint.

# 5G

## Orange is on the road to lead 5G connectivity in Europe



2017

5G PoCs



2018

5G E2E trials



2019

5G Cities



2020

Commercial  
Launch



2021

National  
Coverage

2022

### 5G PPP

The 5G Infrastructure Public Private Partnership

ICT-17-2018: 5G End-to-End Facility

ICT-18-2018: 5G for Cooperative, Connected and Automated Mobility

ICT-19-2019: Advanced 5G validation trials across multiple vertical industries

- IoT Native
- LTE included
- Very high Bandwidth
- Battery life Enhancement to 15 years
- Mu-MIMO
- Latency : 4 ms

- Embedded SIM
- SIM is integrated in the device
- profile is downloaded
- Service could be activated

## Connectez votre montre Samsung

1. téléchargez l'application Samsung Gear sur votre mobile
2. scannez le QR code avec cette application
3. un profil eSIM est téléchargé sur votre montre, activez le
4. votre montre est connectée au réseau Orange, elle est maintenant prête à l'emploi



PIN : 0000  
PUK : 65898454

Cette carte est strictement personnelle. Toute personne trouvant cette carte est priée de bien vouloir l'adresser sous pli non affranchi à : Orange France 1 avenue Nelson Mandela 94745 Arcueil Cedex.  
Cette carte ne peut être utilisée que dans un terminal compatible et fonctionnant sur le réseau Orange France.

Easier : no physical SIM, becoming a software service  
Flexible : could be used on different devices

# Orange Partner

## Select

your devices, modules, starter kits & more



80+

B2B devices available

Discover our IoT Device Catalogue

## Connect

your devices with the right network for your needs



14M+

B2B devices connected

Discover our IoT networks

## Manage

your devices, data & users with our platforms



160M+

data transfers/min managed

Discover our IoT platforms

Home > LoRa® coverage checker

## LoRa® coverage checker

Enter your postcode in France

31670

OK

✓ 31670 LABEGE

✓ covered  
✗ not yet covered  
This tool is updated monthly.



# Starter Kit

## Discover the LoRa® Explorer Kit

Prototype your connected object based on LoRa® technology thanks to our packaged offer including a certified development board and a 6 month free access to our LoRa® network.

The LoRa® Explorer Kit is a development board powered by Microchip that allows easy and quick prototyping of IoT objects and services using LoRa® technology.

This very compact starter kit consists of an Arduino-based platform supporting LoRa® module, Bluetooth module, PCB antenna, rechargeable coin battery and temperature sensor.

The starter kit is pre-configured to access to the Orange LoRa® network available in nearly 4000 cities with a dedicated data plan. The coverage will be national by the end of 2017.

The starter kit also includes access to the Orange data and device management platform – Live Objects – where data is collected and available via APIs.

[Lire cet article en français](#)



**Less 90 \$**  
**6 month LoRa access**

Buy it now

[Is your area covered?](#)

### What we offer

- LTE-M network coverage
- Tools (Faraday cage, battery tester, etc..)
- LTE-M starter kits
- LoRa® starter kits
- Support from Orange experts

### Available Starter kit LTE-M

MangOH Green



MangOH Red



**In Open IoT Lab**  
**Test for free**


SIERRA  
WIRELESS™



[www.gsma.com/iot/mobile-iot-development-kits/](http://www.gsma.com/iot/mobile-iot-development-kits/)

# Developer Program

an Orange Partner Program

 Cyril Hlakkache ▾



## Orange Developer

APIs

Tools

Support



My apps

APIs > IoT

Our range of APIs enable you to take full advantage of our network assets, technical resources and expertise to co-create a great service experience for your customers



Identity



Payment



Communication



Cloud



IoT



Proximity



For Middle East & Africa



More

### Data Share

A single API to create services that connect all your users' objects data. Expand your potential with the Data Share ecosystem.

### Live Objects

Boost your IoT potential ! Live Objects manages your objects , collects, stores, secures and processes your IoT data.

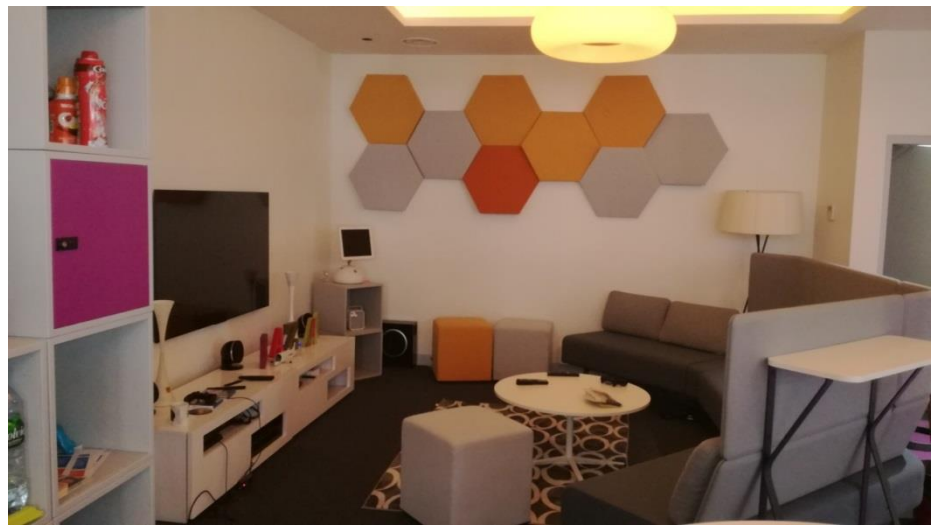
### M2M France

Manage your SIM cards effectively, carry out remote analysis and reduce costs. Starter-kits available for trials.



# Villa Occitanie

By Orange



# Merci

