

Contactless ultrasound for security



Dominique PALACCI
CEO



**In 2025, there will be 25 billions
IoT's in the world.**

**How to collect data under any
circumstances in a secure way?**

How it works?



- STIMSHOP SDK is integrated into any iOS and android app.
- Our ultrasound signals are broadcasted through any speaker (sound system, radio instore, screens, tablets) to create interaction zones matching the place.
- Our HBeacon (Bluetooth + ultrasound) creates specific zone.
- Smartphones « hear » the signals and react according to the app rules (contextualized messages, geolocation, open a service...).



- **Wi-U.S ultrasound** encodes and transfer data under any circumstances: constrained environments (humid, explosive, metallic, electro sensitive, ultra secured).



A topnotch technology

- **UNIVERSAL:** compatible with 100% of smartphones, integrates into any application
- **EASY:** no setup or hardware to install, transparent to users, works without network, without pairing
- **SECURE:** stay confined, exclusive and patented communication protocol
- **LIABLE:** resistant to Doppler effect, noise and jamming, the only technology in the world to do multiplexing, up to 80 meters

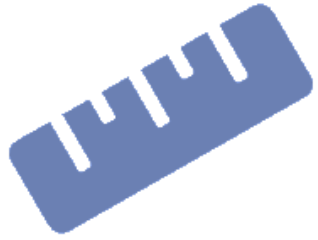


WE USE
ULTRASOUND
TO SEND AND RECEIVE
**DATA OVER
THE AIR**

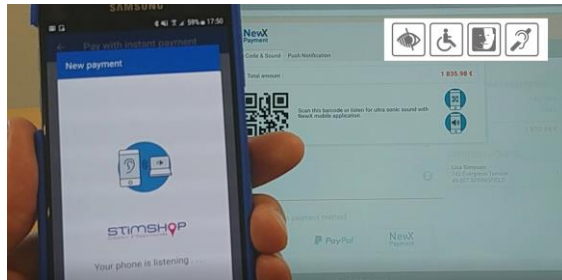


Secure Industry 4.0, IoT and contactless

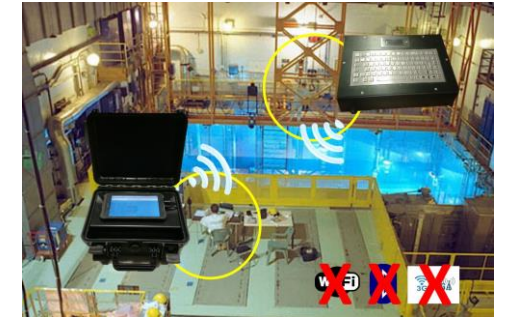
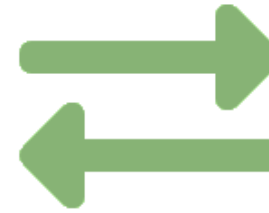
Measure



Authentication



Data Transfer



Presence Detection



Business Cases

Data transfer in constrained environments

Wi-Us ultrasound erases white zones

- Send data wirelessly without radio waves
- Works under any circumstances, without connection
- In explosive, humid, metallic, electrosensitive environments.



Business Cases

Geolocate workers



Secure submarine maintenance operations

- Check workers positions in the submarine by ultrasound, even in explosive areas
- Send alerts by ultrasound all over the site
- Manage access control in different areas of the submarine

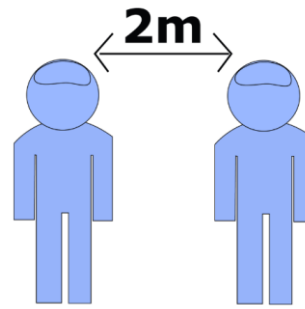


Business Cases

Physical distancing

Help to respect physical distance under all circumstances.

- The SECUMETER badge flashes and vibrates and alerts when the distance of 2 meters is not respected.
- Train and secure workers for an everyday watchfulness.



SECUMETER



Business Cases

Tank thickness measure



Permanent ultrasound thickness measure

- Ask for the thickness measure remotely via an ultrasound IoT instead of having to locally intervene
- Will work ten years thanks to an ultrasound ignition system

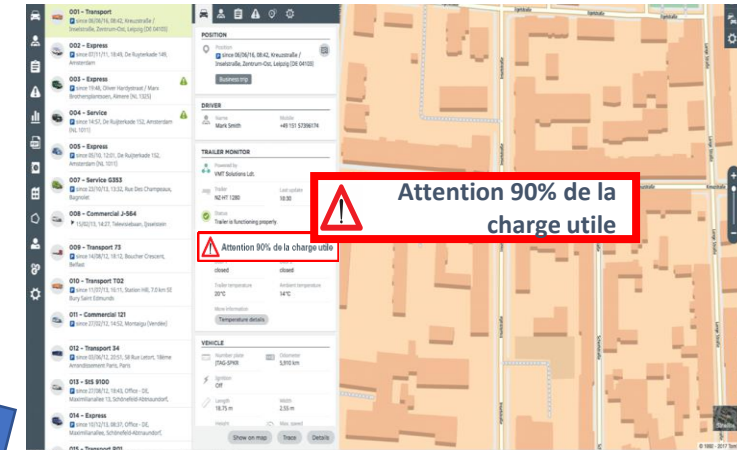


Business Cases

Load estimation

Load estimation via distance measurement

- NSWHEIGHT: watertight ultrasonic telemeter to measure ground distance and derive the load
- Input collected: Brake alarm, Overload alarm, Carbone impact statement, Predictive maintenance



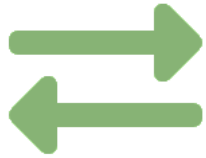
NSWEIGHT

STIMSHOP offer

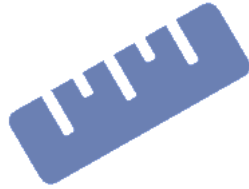
• ucheck.in



Geolocation



Mobile
Interaction

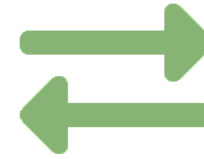


Measure

• Wi-Us



Authentication



Data transfer

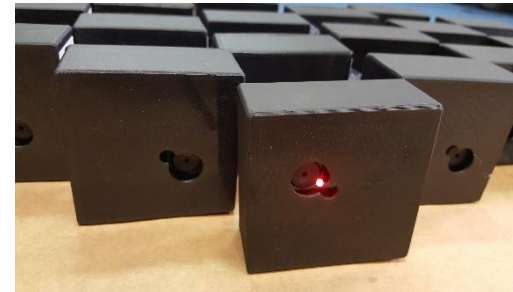


Communication

75% Software Licence



25% Hardware and studies



Near-Ultrasonic Airborne Telecommunications

Benchmark

A few other companies also provide ultrasonic communications, but none as **robust** as STIMSHOP's.



Unique patent

- Distance
- Multiplexing

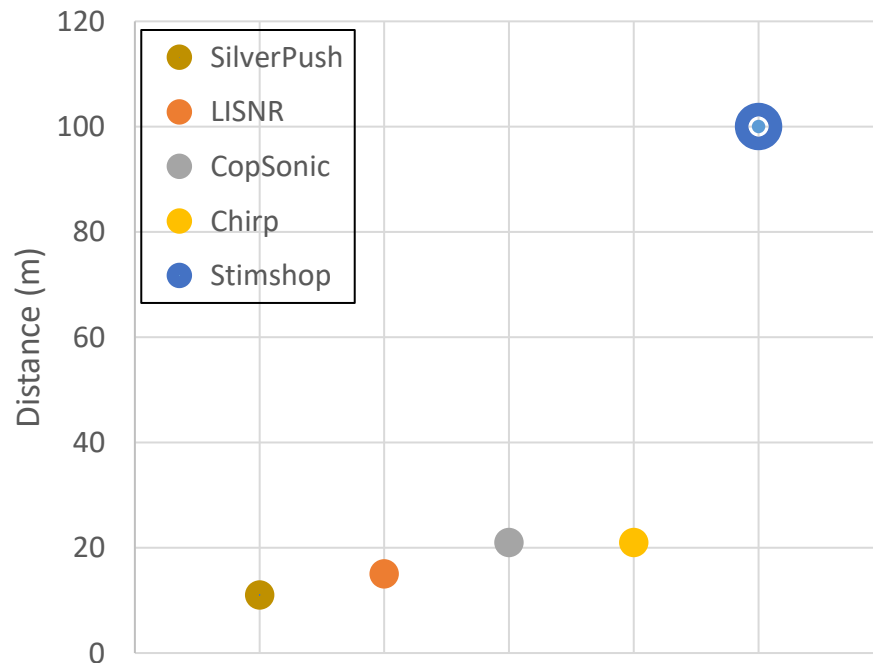


Fig 4: Ultrasonic communication systems comparison in range capacity.

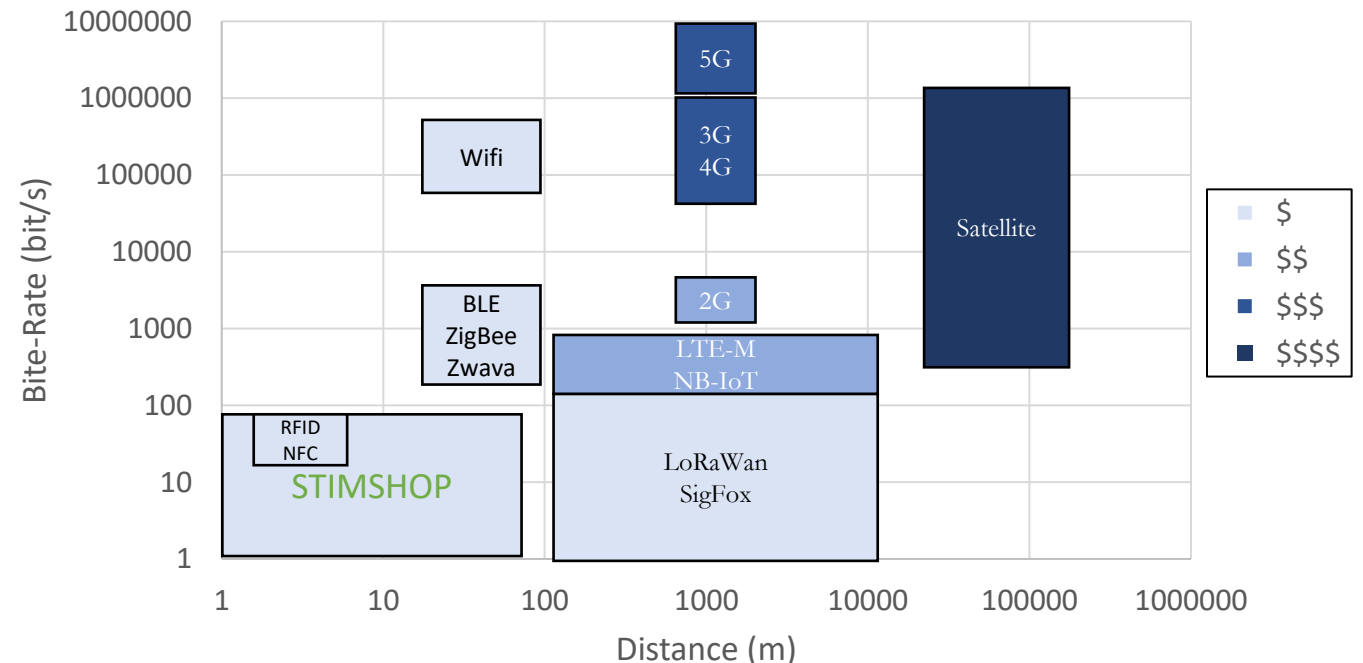


Fig 5: STIMSHOP and RF communication systems comparison in bit-rate, range and cost.

Team



Dominique PALACCI
56 years - CEO
edhec 1986



William SCHLEGEL
50 years - CTO
Efrei 1991



Bruno JAUFFRET
53 years – Business
Developer EMP 1985



Arthur AUBERTIN
28 years - R&D
Paris VI, PhD
Acoustic engineer



Cédric COPPIN
24 years –
Electronic engineer
ESIEA



Joséphine MASINI
22 years –
Electrical engineer
Sorbonne University



Ilya FRANCIOSI
28 years –
Acoustic engineer
Paris VI

Acceleration

RéIndustry



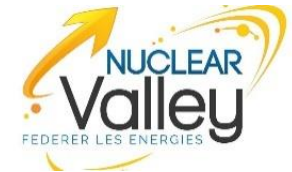
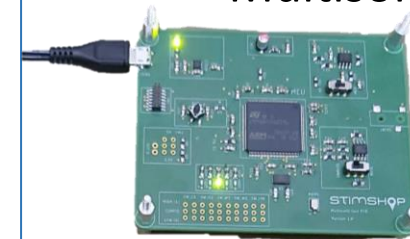
Milkshake Valley



Hewlett Packard
Enterprise

Development

Multisonic Module



Research

Multi elements ultrasound



Presence in Europe and Asia



Customers, partners and supports

Customers



Partners Distributors



**Business
Services**



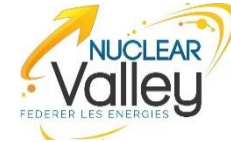
SOMRAS



VENTURES



Certifications



**Hewlett Packard
Enterprise**

Awards

New Shopping Experience 2015, 2016

Vivatech 2016, 2017, 2018, 2019

IT Innovation Forum 2017, 2019

2018 : CEBIT Road Show, Airbus Développement
Total Développement Régional
Digital Day Nuclear Valley
Forum Innovation CETIM

2019 : Global Leader IE-Club – HPE Startups
e-Payments Worldline

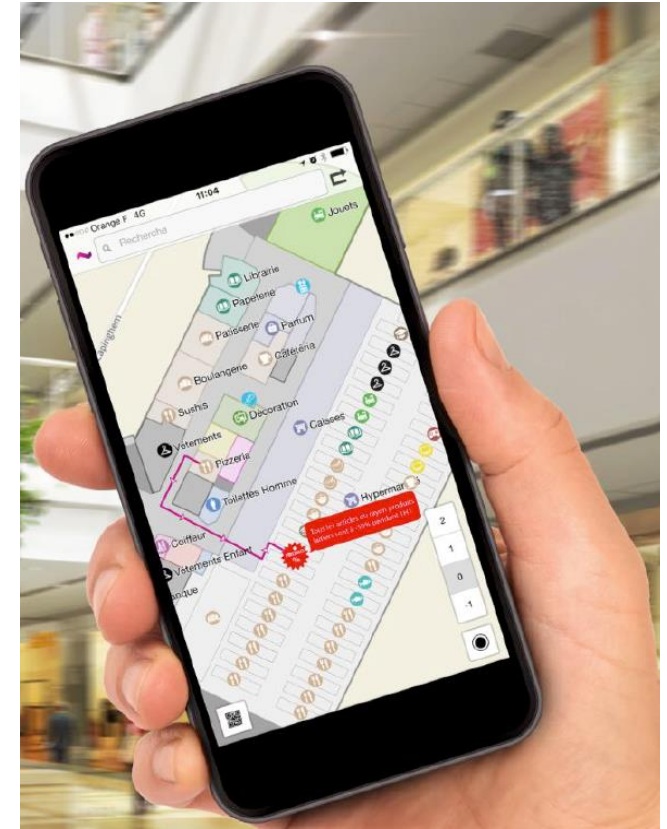
2020: Global Industry, Slingshot



Business Cases

Contactless
situation

STOP
COVID



STIMSHOP
Mobile interactions and data transfer

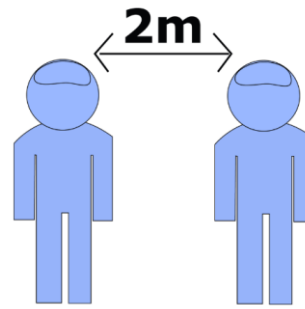
STIMSHOP
Mobile interactions and data transfer

Business Cases

Physical distancing

Help to respect physical distance in all circumstances.

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SECUMETER



Business Cases

Check-in

Electronic signing by ultrasound

- Instead of signing a list, the presence is certified by “earring” the ultrasound signature of the place via the app.
- Ultrasound matches the place.
- Nothing else to do when the app is downloaded.



Business Cases

Access control



Authentication by ultrasound

- Send access rights via the app
- Contactless access control up to 3m with a smartphone, without connection
- Monitor the route on the back office



Business Cases

Monitor elevator

Contactless Call for a lift by ultrasound

- Ask for an elevator on the app, without touching the button
- Choose the floor on the app

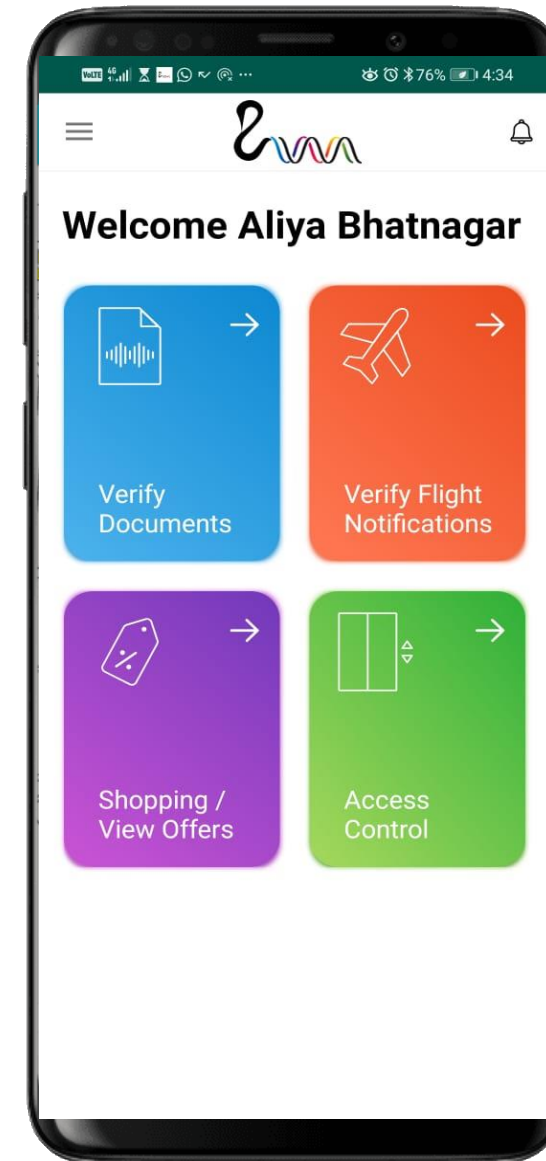


Business Cases

Frictionless Smart Terminal

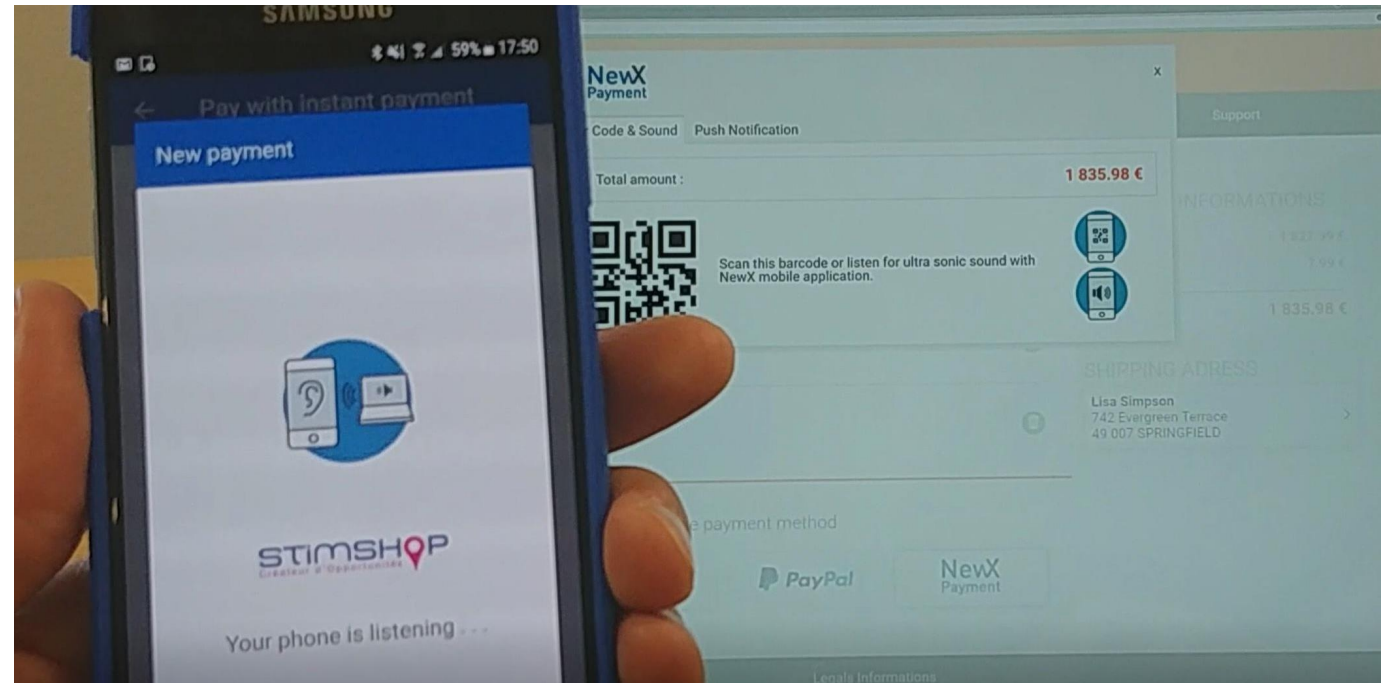
Airport Passenger journey via ultrasound

- Remote Control of documents (Id, ticket)
- Send fly notifications via sound system
- Duty free Incentive
- Airlines companies Loyalty program



Business Cases

Mobile payment
by ultrasound



STIMSHOP
Mobile interactions and data transfer

STIMSHOP
Mobile interactions and data transfer

Business Cases

Payment assistance for blind people



worldline
e-payment services

Help blind people to pay in complete autonomy

- What is displayed on the payment terminal is sent by ultrasound.
- The app will dictate the instructions for the blind customer to make the payment by himself, in total discretion



Business Cases

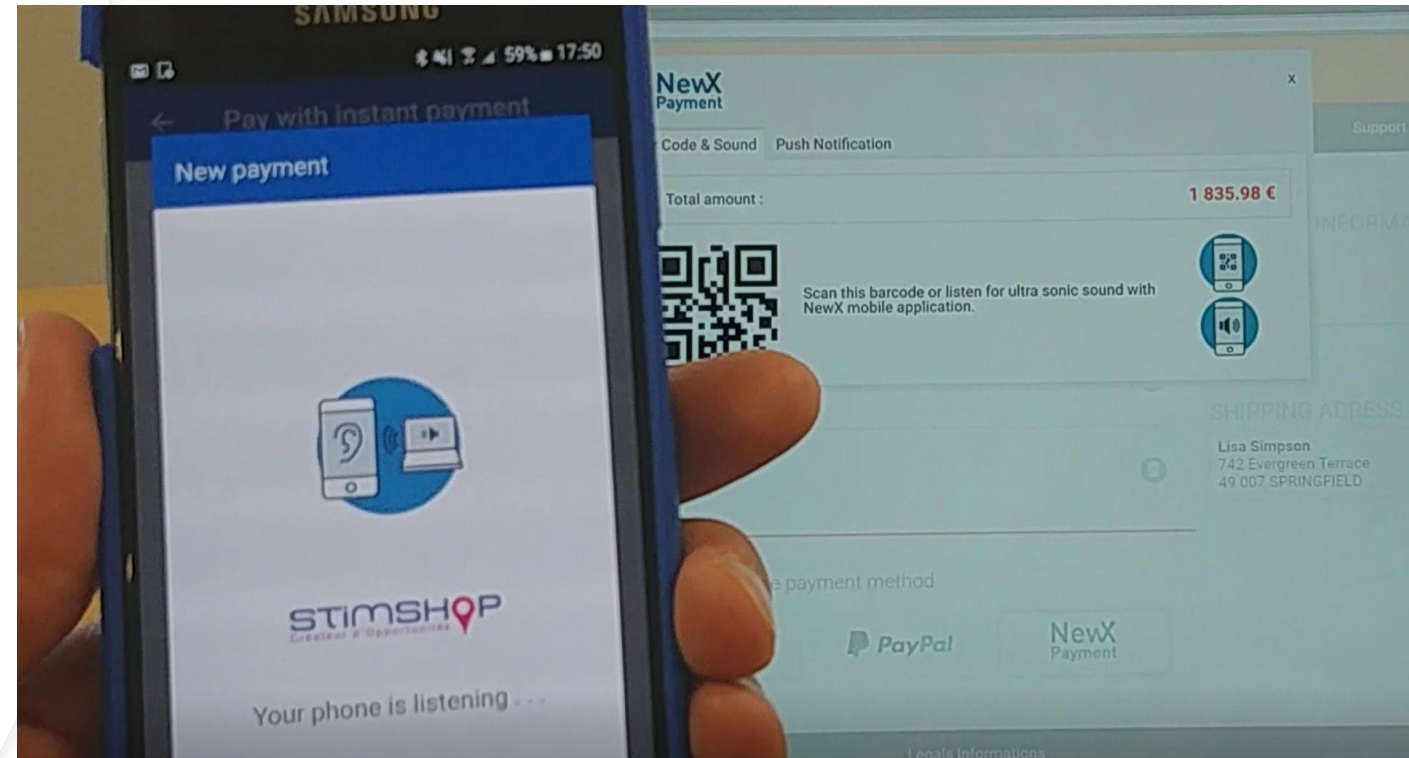
Payment validation



worldline
e-payment services

For a fluid and secure payment validation

- The device send the bill locally by ultrasound.
- The bank app display the amount on the smartphone for acceptance.
- Then send the validation code of the payment by ultrasound.
- The device answer to finish the transaction.
- All this in 10 seconds, without connection.



Business Cases

Data transfer
in constrained
environments

Explosive environments
Electro sensitive areas
Humid environments
High security issues



Business Cases

Data transfer in constrained environments

Wi-Us ultrasound erases white zones

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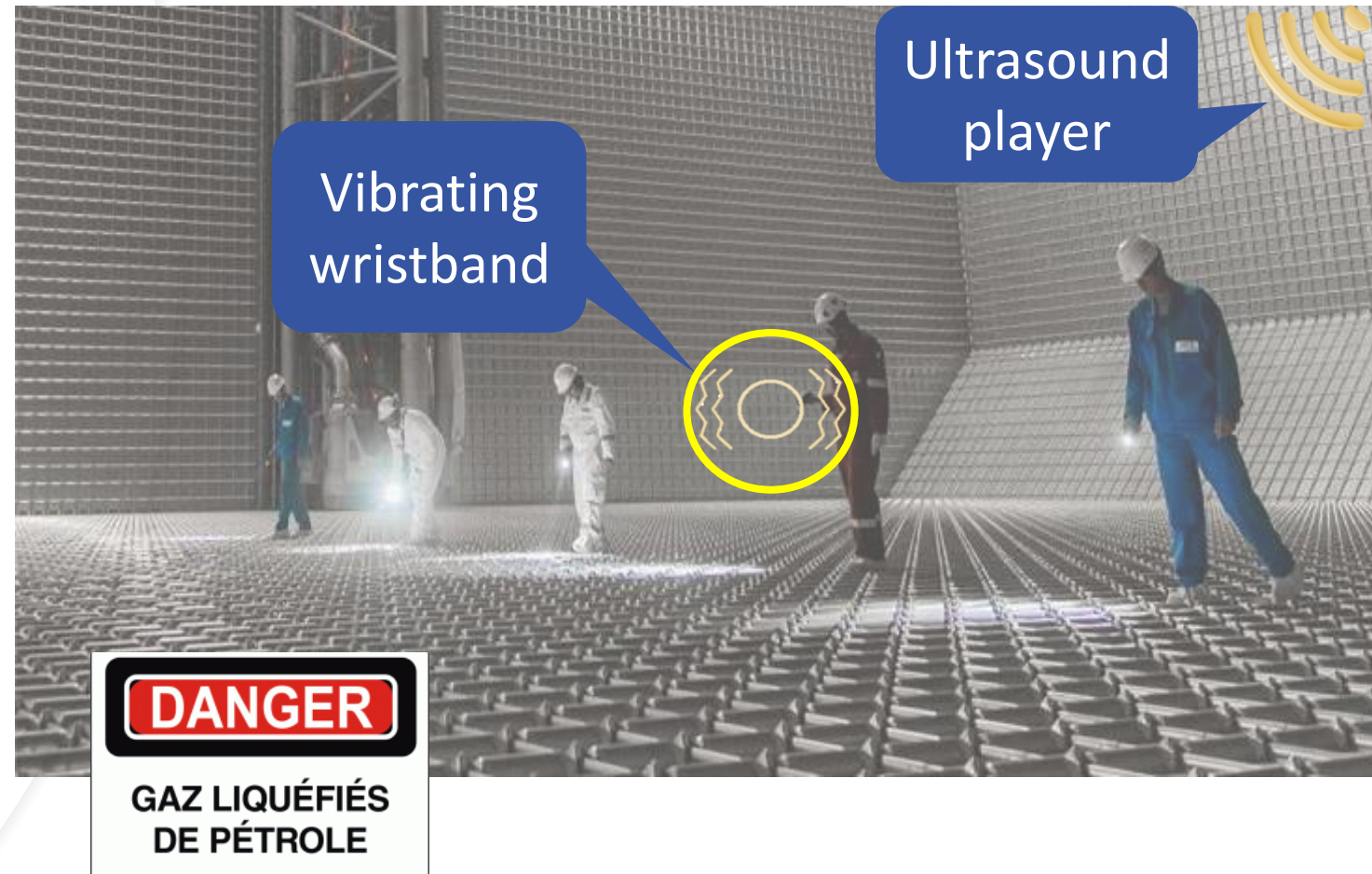
Business Cases

Secure isolated workers



Transfer alerts without explosion risk

- Even in a Faraday cage, the ultrasound will alert workers of a danger.
- Works with any existing device with a speaker and a microphone.



Business Cases

Geolocate workers

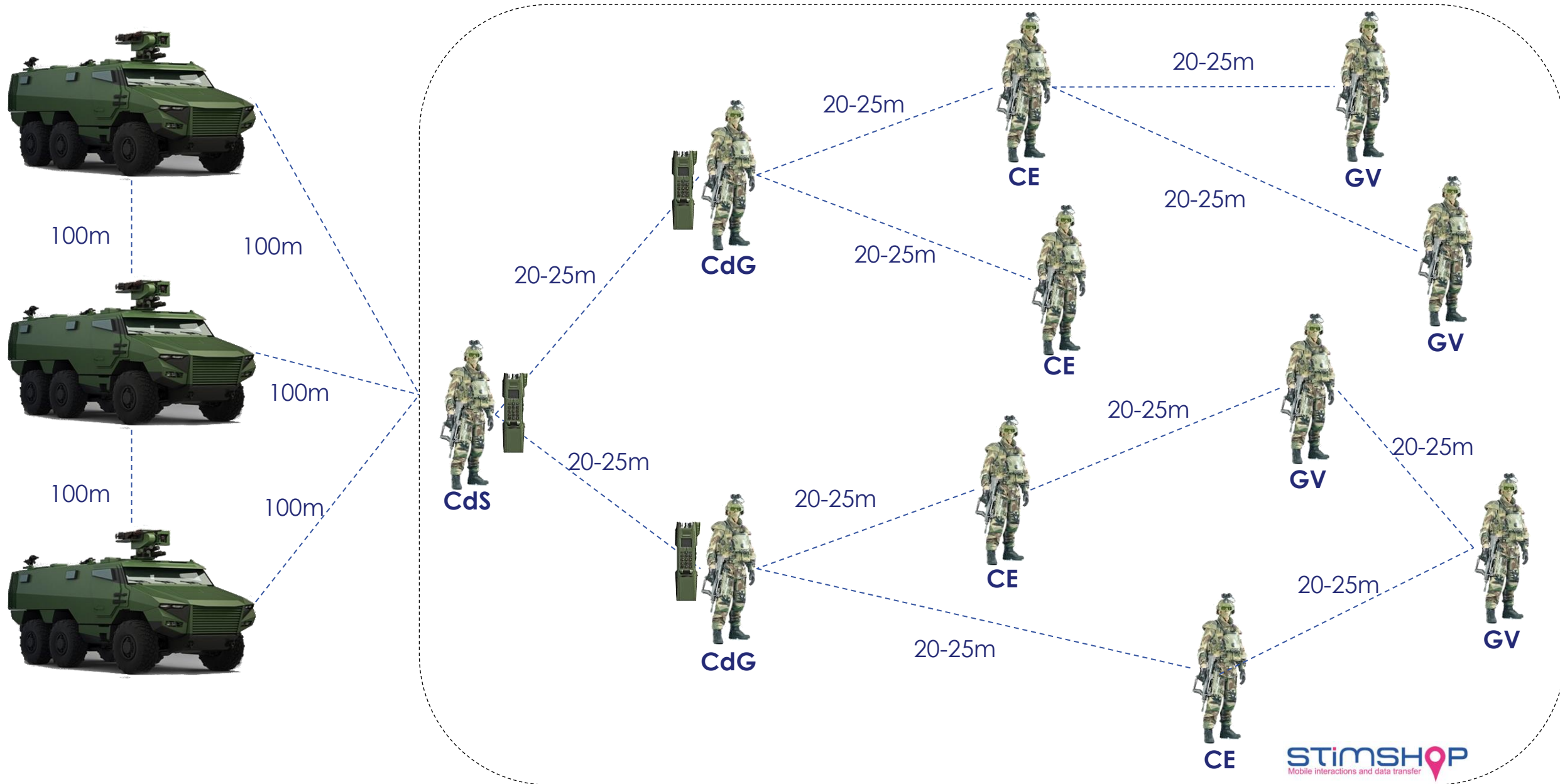


Secure submarine maintenance operations

- Send workers positions in the submarine by ultrasound, even in explosive areas
- Send alerts by ultrasound all over the site
- Manage access control in different areas of the submarine



Send instructions in a « Radio silence » mode with Wi-Us Mesh



Business Cases

ultrasound virtual markup

Mark dangerous zones for personal alerts

- Ultrasound signals are emitted when there is a danger.
- The badge will alert the worker for a very relevant personal alert that will be more taken into account.



Business Cases

Tank thickness measure



Permanent ultrasound thickness measure

- Ask for the thickness measure remotely via an ultrasound IoT instead of having to locally intervene
- Will work ten years thanks to an ultrasound ignition system



Business Cases

Optimize helicopters maintenance



Receive sensors measures under any circumstances

- Send the sensors' measures by ultrasound
- Will work in explosive, metallic and electro sensitive environments.



Business Cases

Authentication and
measure for
automotive



Business Cases

Ultrasound key via smartphone

Unlock the vehicle by an ultrasound key broadcasted via the speakers of the smartphone

- More secure than radio waves
- Possibility of temporary sharing rights for car sharing



Business Cases

Ultrasound debitmeter

Non-intrusive ultrasound system to measure the exhaust flow.

- Can be easily installed on aftermarket vehicles.
- Permanent installation for measures on demand.
- Monitoring for car maintenance.



faurecia

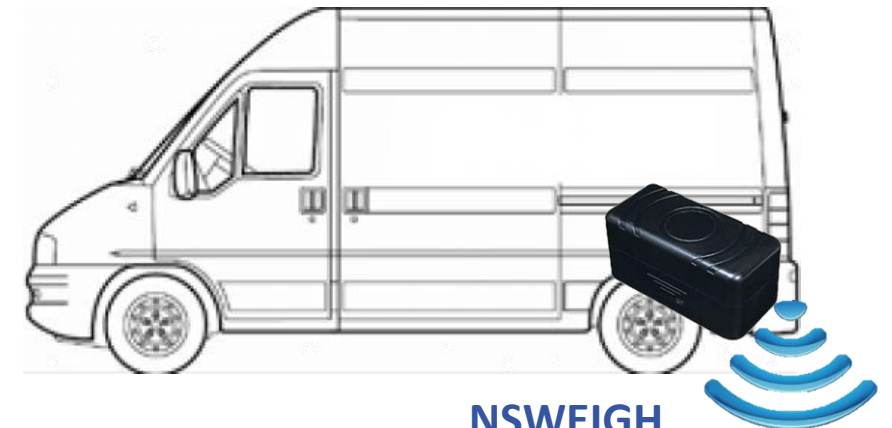


Business Cases

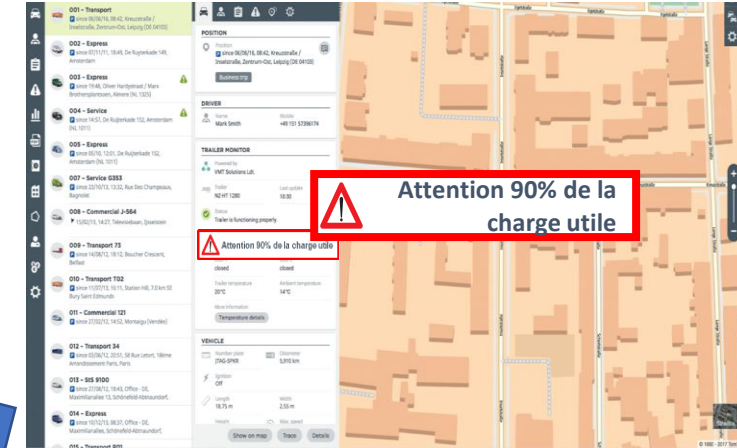
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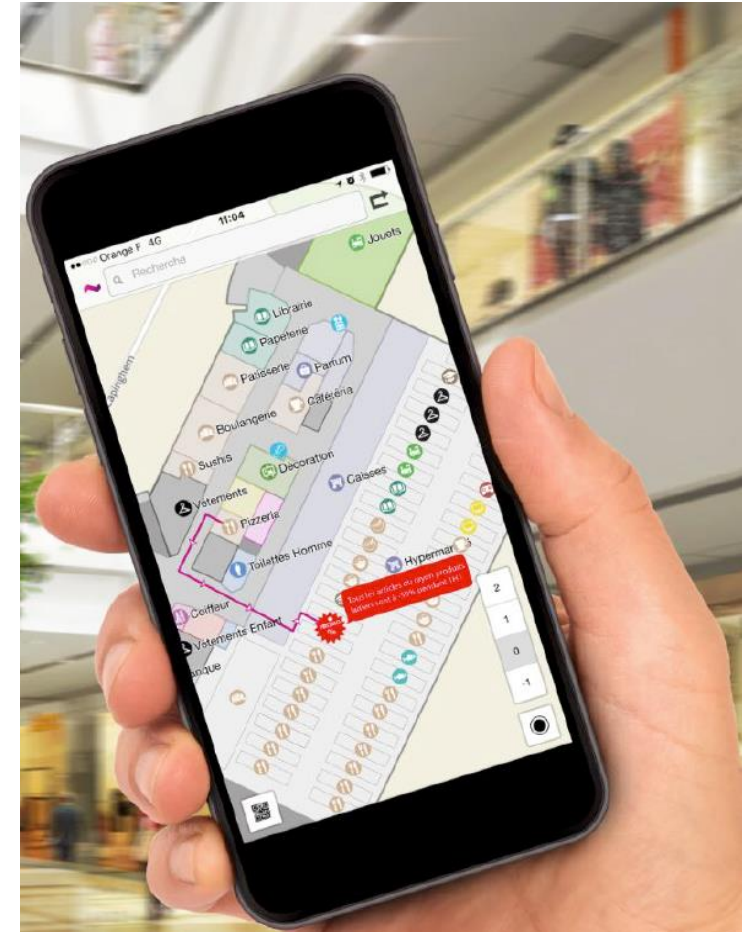


NSWEIGH



Business Cases

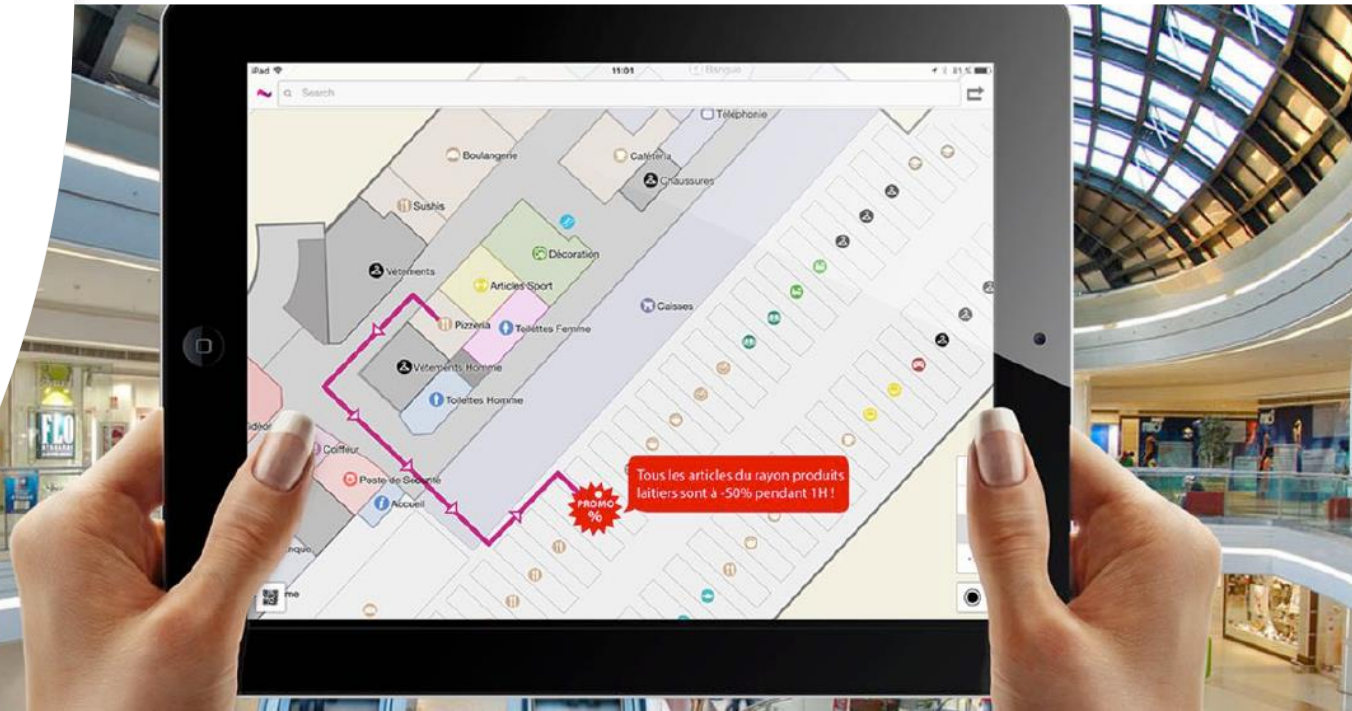
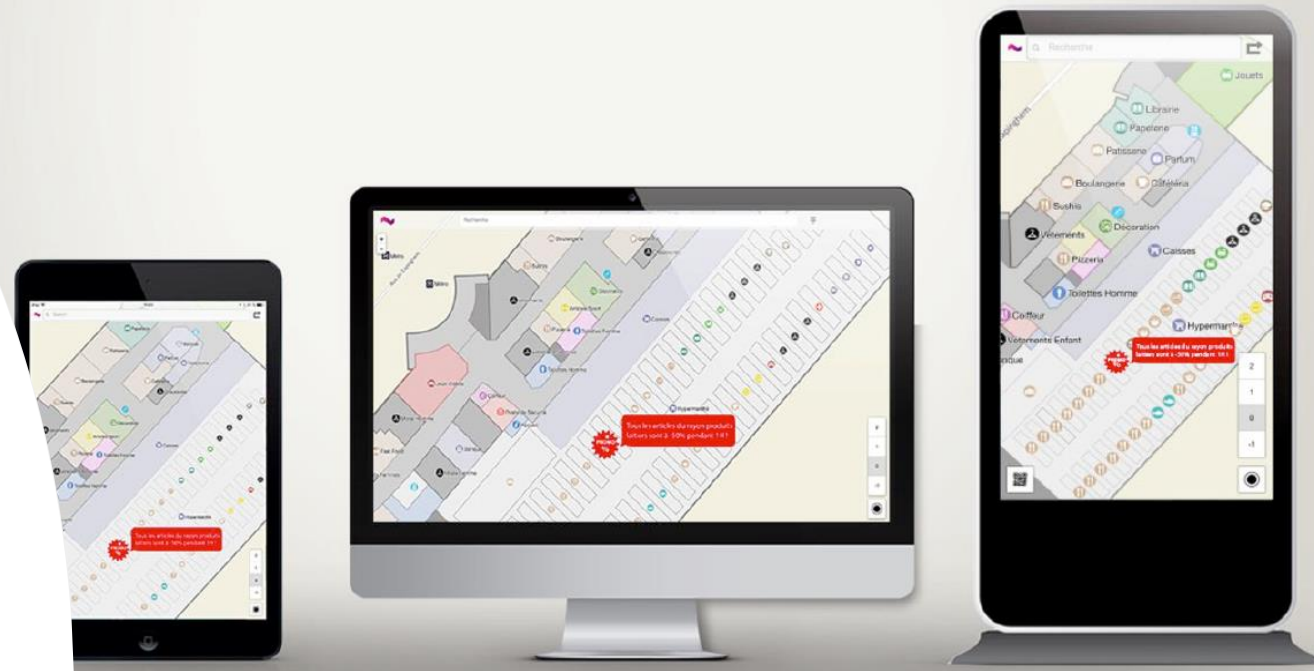
Geolocation
by ultrasound



Easy to use

Ultrasonic GPS indoor without radio waves

- STIMSHOP SDK is integrated into any iOS and android app.
- Our ultrasound signals are broadcasted through any speaker (sound system, radio instore, screens, tablets) to create interaction zones matching the place.
- Visitors' smartphones « hear » the signals and react according the app rules (contextualized message, geolocation, open a service...).



Easy to deploy

- Play our “**ucheck.in**” signals through an existing sound system
- Install our ultrasonic “**HBeacon**” to create points of interest
- Manage contextualized mobile interactions for instant messages, security alerts, announcement translation...
- Wi-Ultrasound code data and transfer it in any circumstance: wet environment, explosive, metallic, electro sensitive, ultra secured.



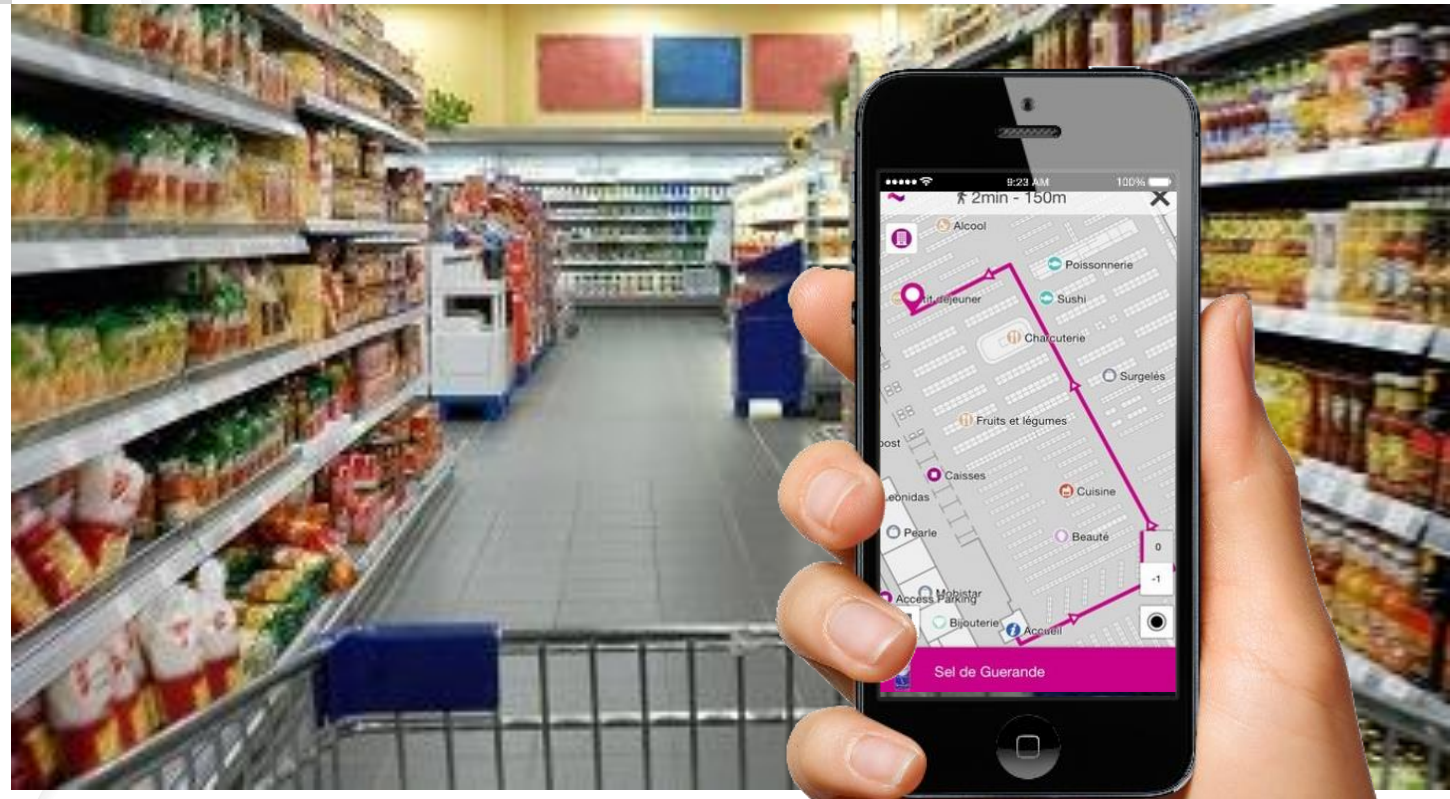
Business Cases

Guiding



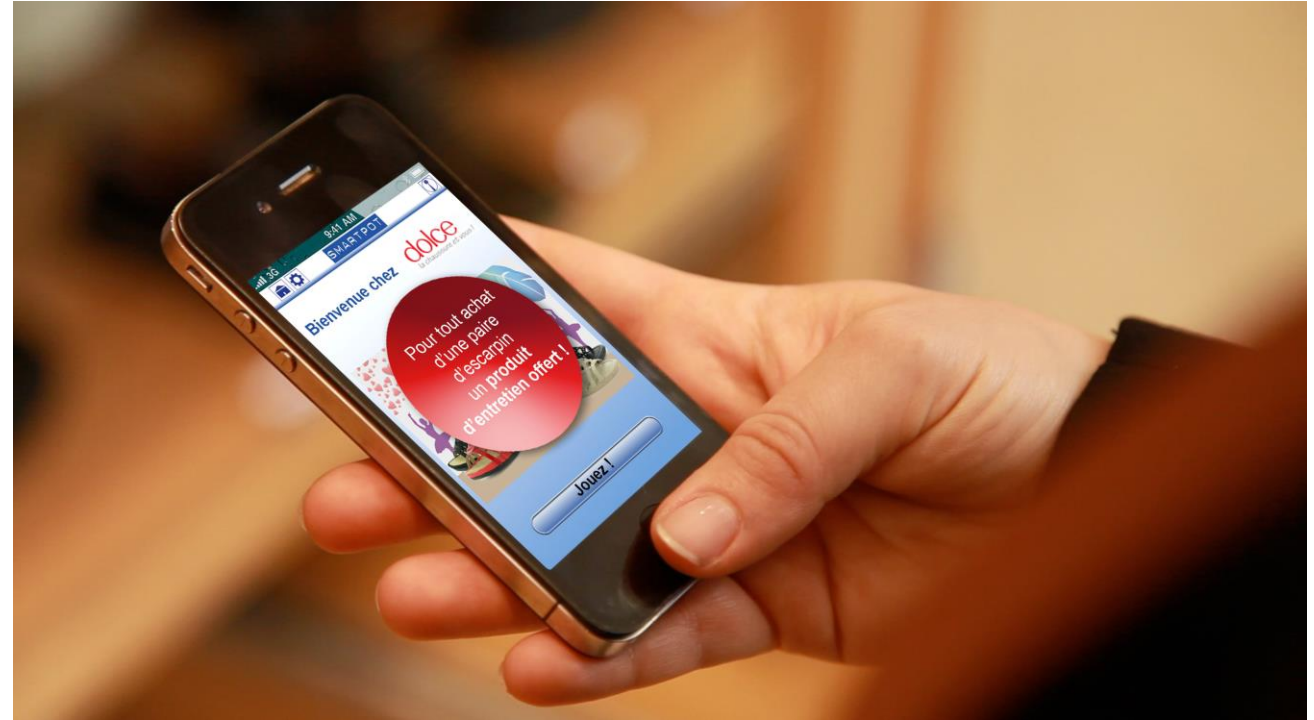
Be guided to products

- Plan of the shop is published on Mapwize
- HBeacons play ultrasound signals to create interactive zones in the alleys.
- Service is integrated in the shop app that will determine the customer position in the shop and calculate the way to a product.



Business Cases

Proximity Marketing
for retail and
entertainment



STimSHOP
Mobile interactions and data transfer

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Mobile interactions and data transfer

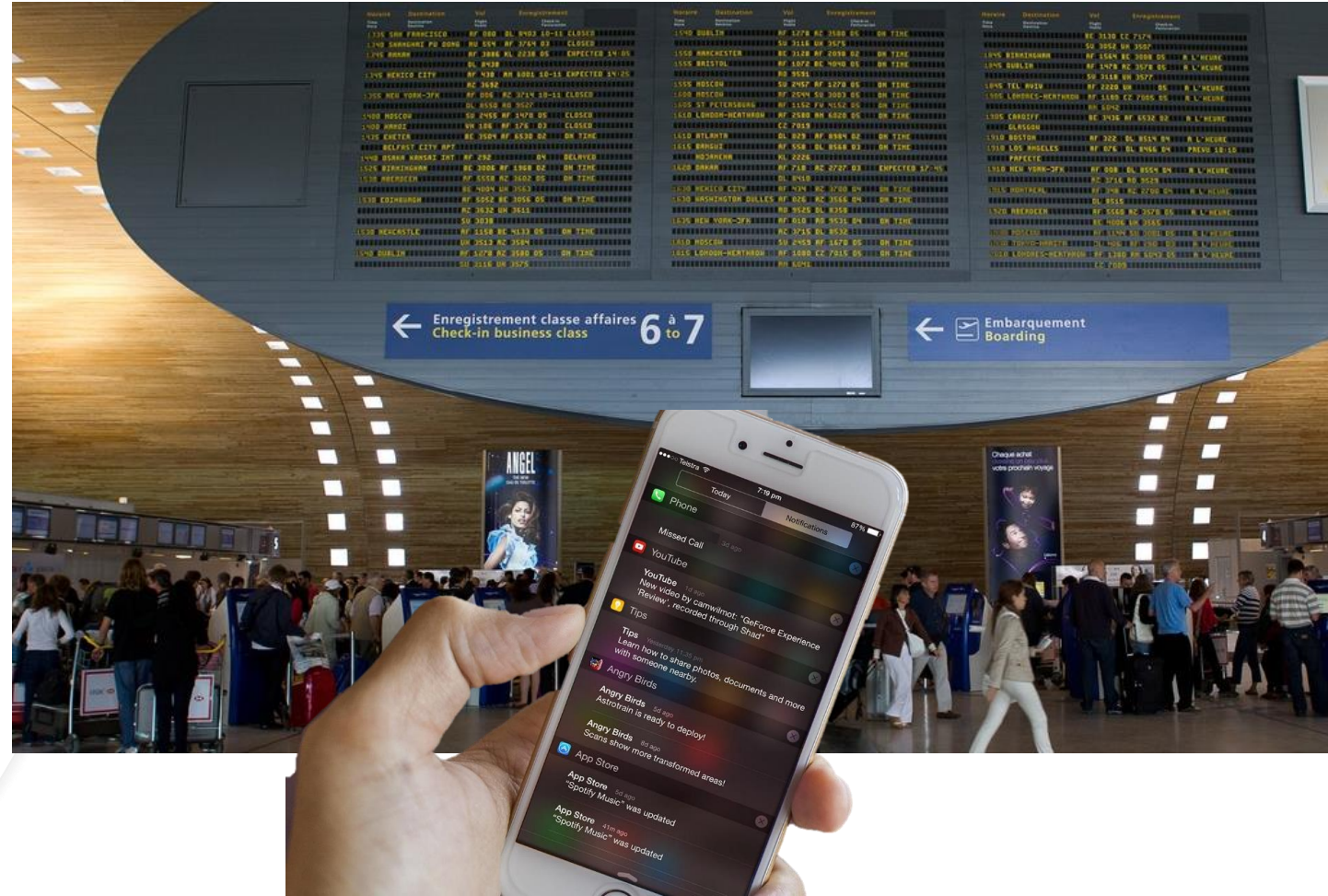
Business Cases

Accessibility



Service for the hearing impaired

- Ucheck.in SDK is embedded in Paris Aéroport app
- Audio announcements are tagged with ucheck.in signals
- Broadcasted through existing sonorization, ucheck.in signals write down local messages in the app



Business Cases

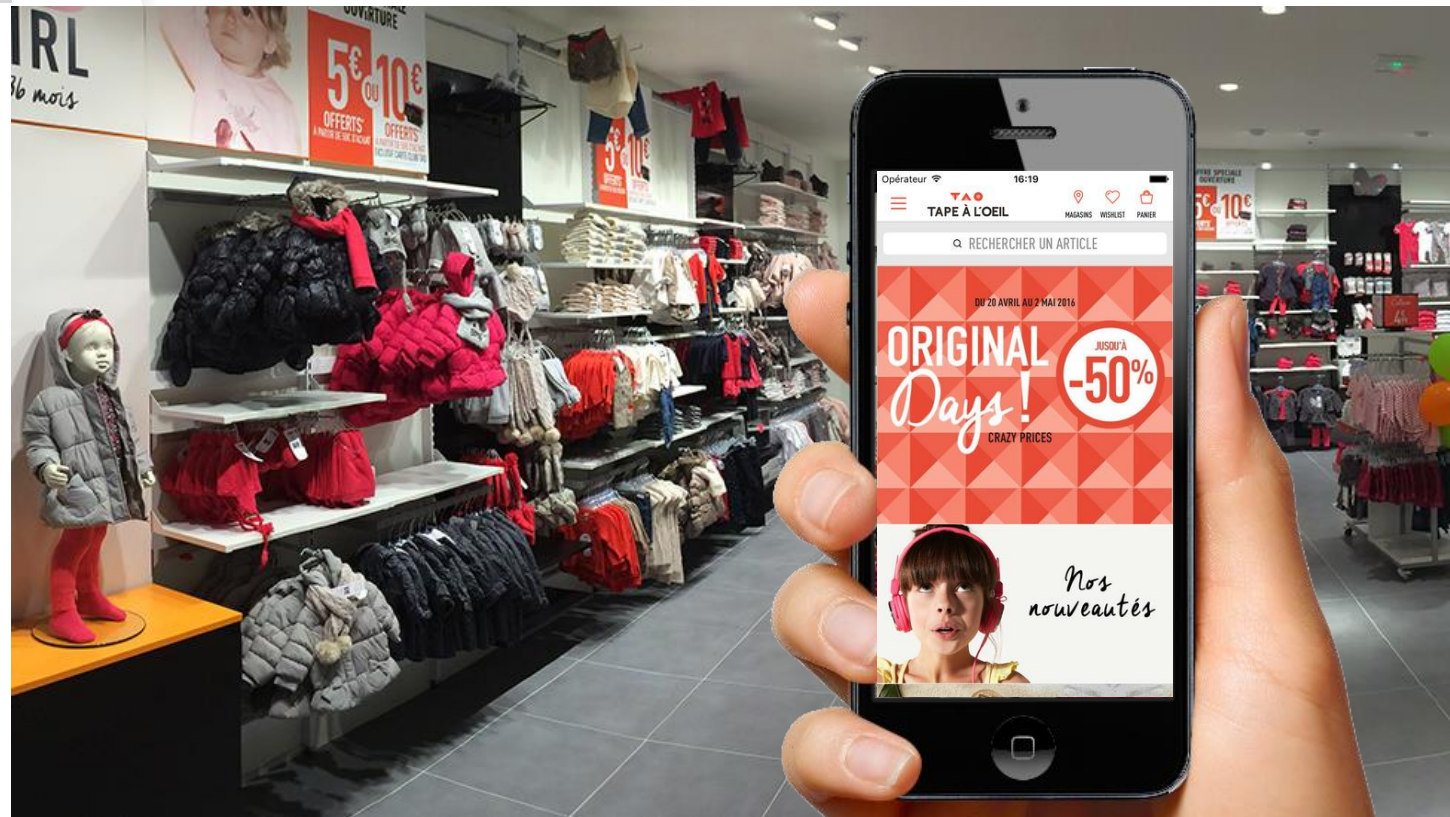
Loyalty



tape à l'œil...

Associate geolocation context with customer knowledge for a personalized journey

- HBeacons create interactive zones to localize the customer in the shop.
- The app is linked with the loyalty program.
- Messages will pop up only if the message is relevant for this customer.
- Physical cookies are sent to the loyalty program to enrich customer knowledge.



Business Cases

Wait marketing

BRICO MARCHÉ
Pouvoir tout faire **Moins cher**

Keep on shopping instead of waiting to be served

- Service booth is equipped with a tablet to send queue number. The number is broadcasted by ultrasound through the sonorization.
- Customer enter in number in the shop app and keep on shopping.
- He is alerted when it's time to be served.



Business Case

Help call



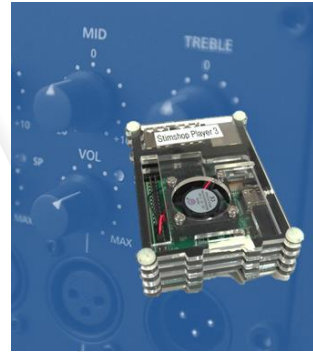
Be advised when needed

- HBeacons match the alleys.
- In the shop app, customer asks for assistance.
- The app geolocalizes him and send a message to the appropriate seller.



Business Cases

Gaming



Propose a fun experience

- Our UMIX box mixes ultrasound signals with existing music flow of the mall.
- Customers receive alerts in the mall's app while they are shopping in the mall.
- Instant win, withdrawal, make all smartphone flash together, drive traffic to a specific shop...



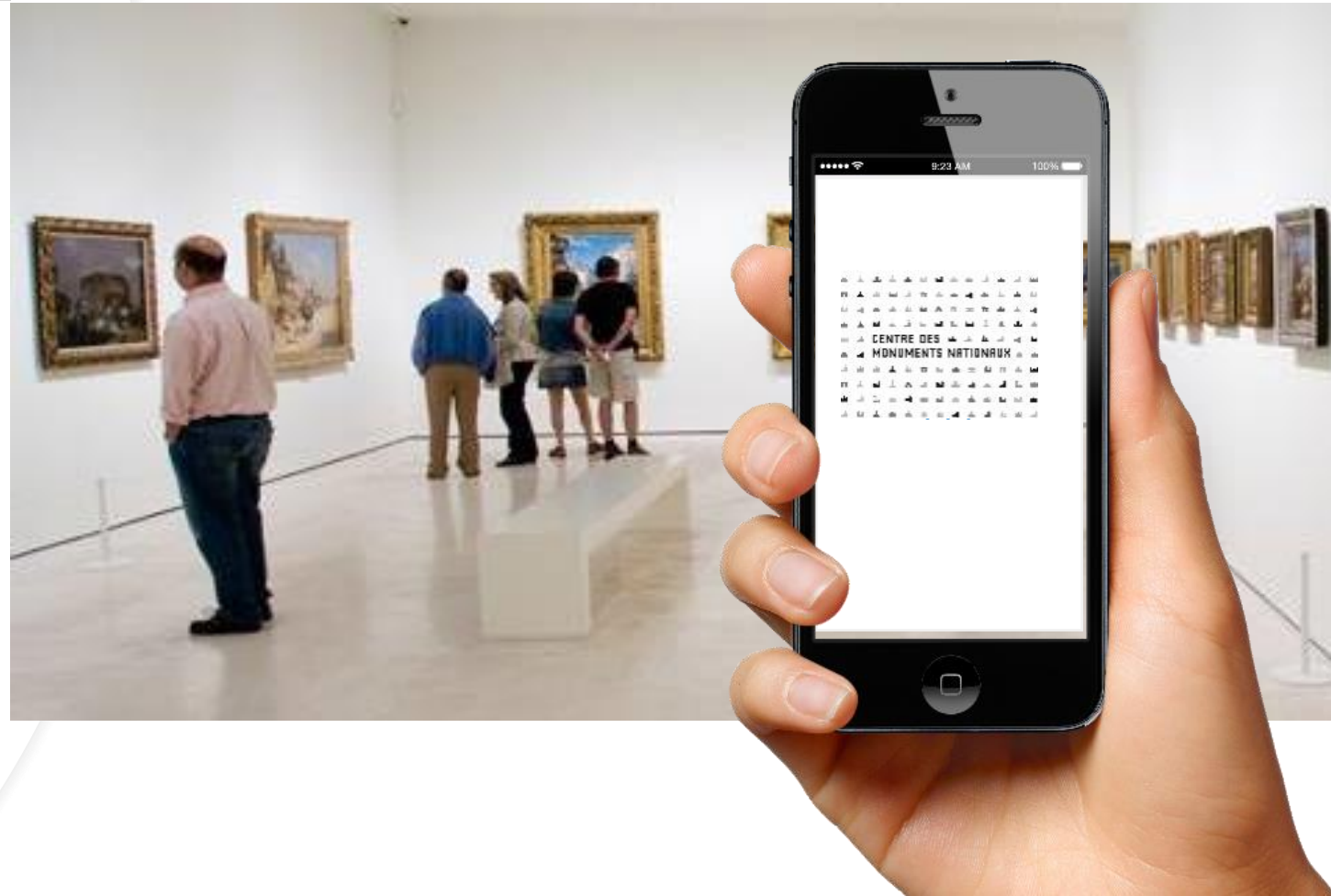
Business Cases

Interactive visit



Information is shown on the smartphone when approaching a point of interest

- Each point of interest is equipped with a HBeacon.
- Like an audio guide, the museum's app broadcasts information linked with the ultrasound signals on the smartphone.
- No need to borrow a hardware or type a number.



Business Cases

Smartphones pairing

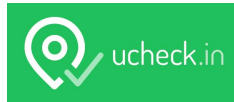


Synchronize smartphones for an unforgettable event experience

- Mix ultrasound signals in the sonorization.
- The fan app will display color show for a wide Tifo
- All the fan smartphones will start flashing together, for a collective experience.



*"If you want new results,
stop doing the same things."*
Albert EINSTEIN



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