MPNs for critical infrastructure in Belgium

Born and raised in B2B connectivity, we combine innovation, expertise, and talent into (mobile) connectivity solutions that will make both your business and society grow. 0G to 5G.

CITYMESH

connecting opportunities

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Challenging the Belgian status quo as
National Operator
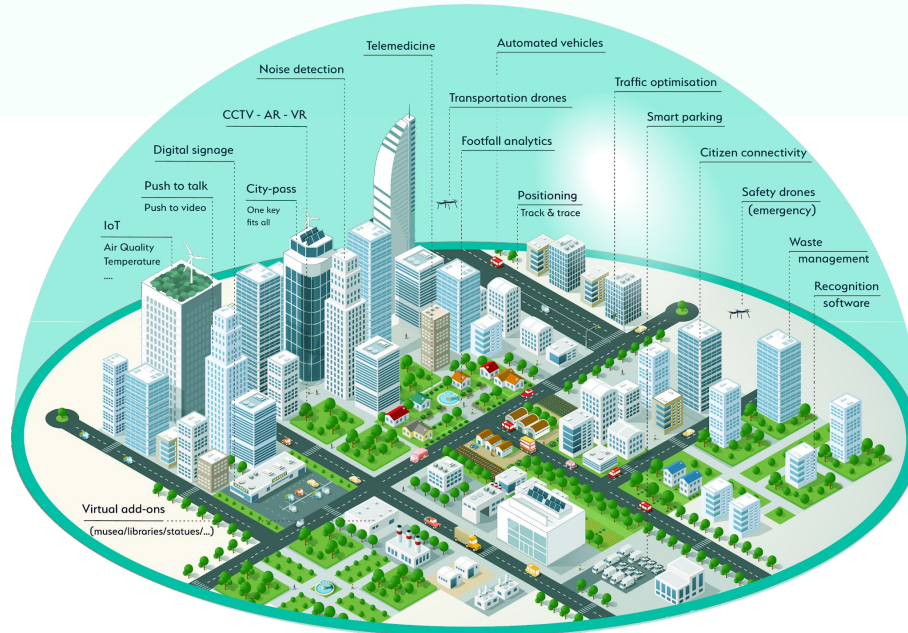
European leader in
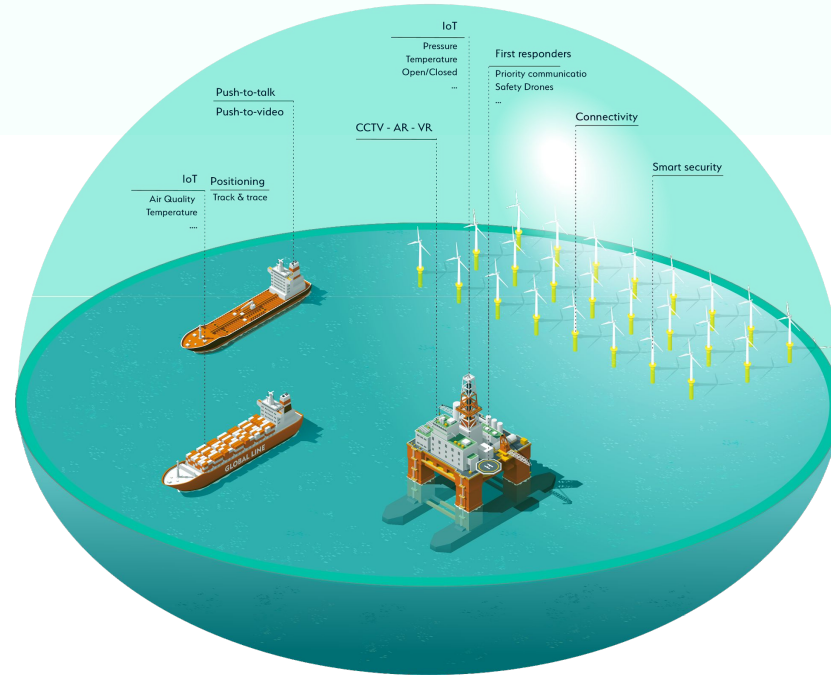# Mobile Private Networks

Operator of the BE & NL
0G IoT networks

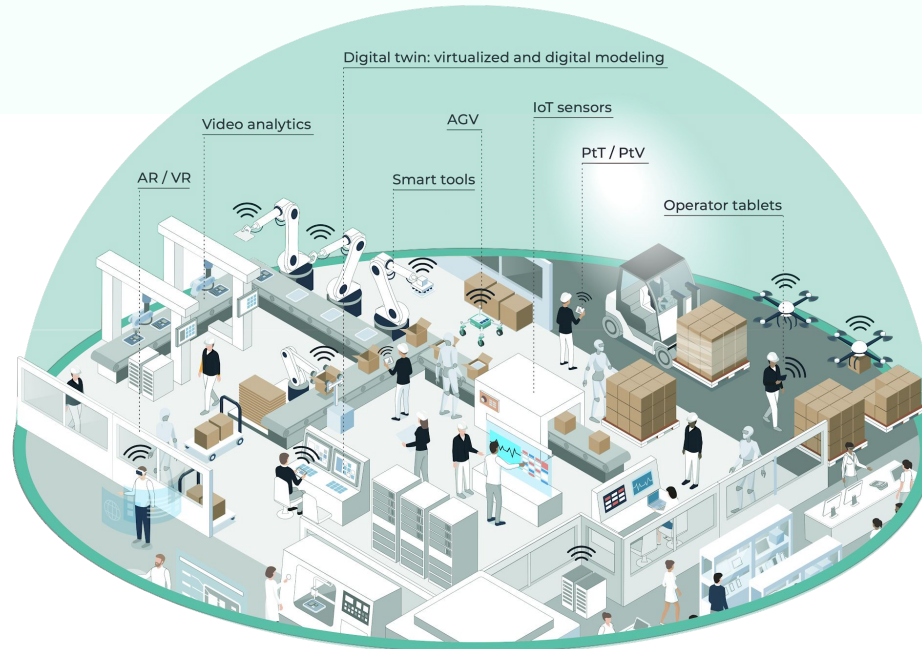Unlocking opportunities with
Safety Drones

Government

IoT
Air Quality
Temperature
...

Push to talk
Push to video

Digital signage

City-pass
One key
fits all

CCTV - AR - VR

Noise detection

Telemedicine

Transportation drones

Footfall analytics

Automated vehicles

Traffic optimisation

Smart parking

Citizen connectivity

Positioning
Track & trace

Safety drones
(emergency)

Waste
management

Recognition
software

Virtual add-ons
(musea/libraries/statues/...)

Blue energy

IoT
Pressure
Temperature
Open/Closed
...

First responders
Priority communicatio
Safety Drones
...

Connectivity

CCTV - AR - VR

Smart security

Push-to-talk
Push-to-video

IoT
Air Quality
Temperature
...

Positioning
Track & trace

Industry

Digital twin: virtualized and digital modeling

Video analytics

AR / VR

AGV

IoT sensors

PtT / PtV

Smart tools

Operator tablets

Entertainment

Safety drones
(emergency)

Organisation connectivity

IoT
Air Quality
Temperature
....

Event-pass
One key
fits all

Guest connectivity

Noise detection

Recognition
software

Waste
management

Push to talk
Push to video

CCTV - AR - VR

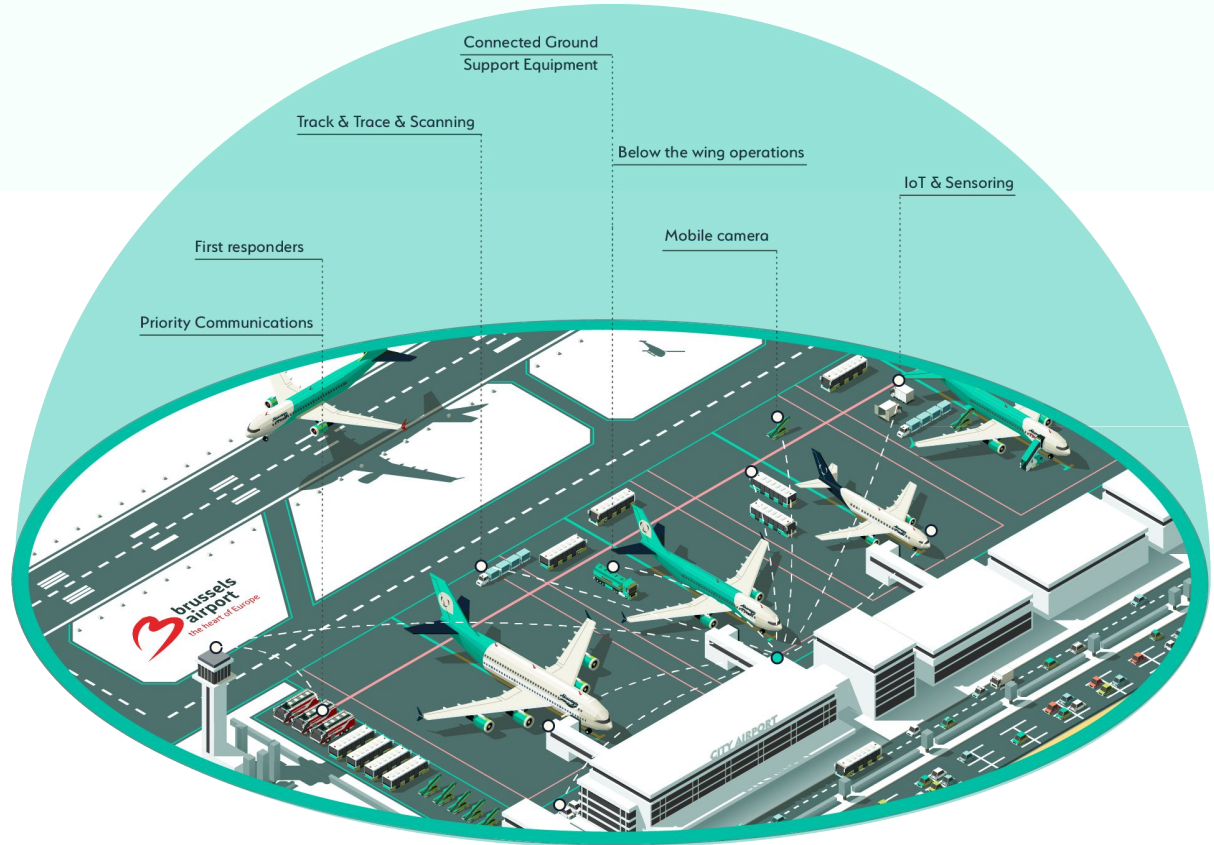Digital signage

Positioning
Track & trace

Footfall analytics

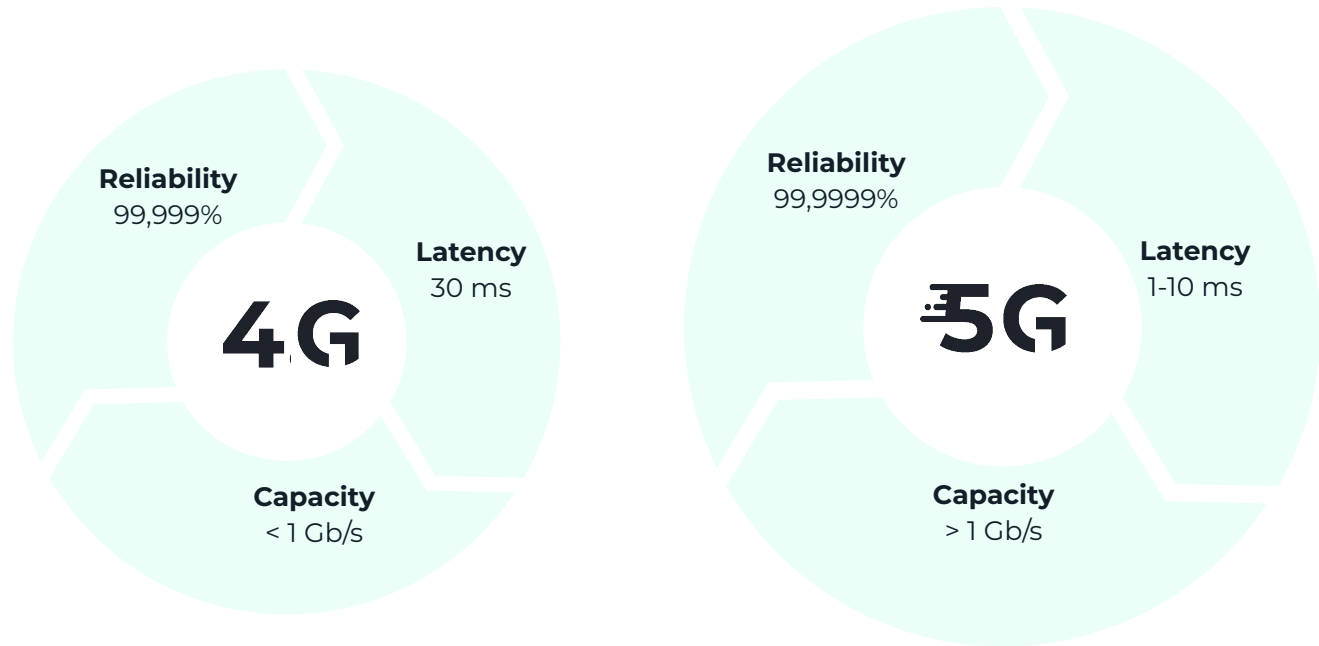Access control

Brussels airport
Use cases

Together with Brussels Airport Company we defined 130 use cases for a Mobile Private Network at the airport.

5 mission critical
90 business critical
35 commercial

Connected Ground Support Equipment

Track & Trace & Scanning

Below the wing operations

IoT & Sensoring

First responders

Mobile camera

Priority Communications

brussels airport
the heart of Europe

CITY AIRPORT

95% of <u>today's</u> industrial and critical applications

4G

Reliability
99,999%

Latency
30 ms

Capacity
< 1 Gb/s

5G

Reliability
99,9999%

Latency
1-10 ms

Capacity
> 1 Gb/s

We defined 21 MPN use cases with BASF, of which 5 critical ones:
  Mission-Critical PTT
  Man-Down detection & response
  Location-based emergency warning system
  Remote control of emergency acitivities
  Traffic displays

Of the mission critical ones only 2 are truly enhanced by 5G, but cannot be deployed yet due to existing UE's

Of the total 21 uses cases only 4 rare truly enhanced by 5G

D ▪ BASF
We create chemistry

We defined 12 MPN use cases with Takeda, of which 3 critical ones:
 Autonomous indoor positioning with collision detection
 Remote control of AGV's
 Mission-Critical PTT

Of the mission critical ones all are truly enhanced by 5G, but the relevant 5G features are not yet available or reliable.

Of the total 12 uses cases only 3 are truly enhanced by 5G

Takeda

Creating the airfield of the future

By integrating a modem in all airside light fixtures we can
- Create a digital twin of the air strip
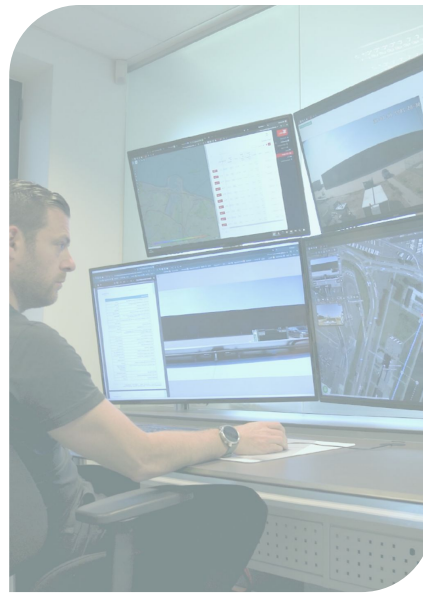- Get real-time sensor readings

All phase 1 project requirements can be fulfilled using 4G

In phase 2, when realtime control is introduced, 5G (URLLC) becomes a hard requirement

ADB SAFEGATE

Deploying Safety Drones across all regions in Belgium

2 m. emergency calls

Per year in Belgium

40 pilots

Working from 5 remote control centers

70 Safety Drones

Deployed over 35 zones all over Belgium

+1000 flights

Were done during the POC phase from 2021 to 2023

Mission Critical MPN use cases
Key learnings

Mission-critical use cases often create the need for an MPN but don't drive the budget.

Mission-critical use cases are often a small subset of the relevant use cases for a client.

Often it makes more sense to start with 4G and define a clear path towards 5G.

UE availability, 3GPP feature availability, brownfield UE landscapes and network stability can complicate reliable mission-critical use case deployment

Mission-critical use cases can require reliable connectivity beyond a small geographical area.

The requirement for reliable communication can go beyond the private network area, and may require creative hybrid networking solutions.

Thank you

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Robin Leblon
CTO