International Connectivity overview & trends

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2023 Let's Connect Webinar Serie

Connectivity
Today

RSP & eSIM
June

Control Center
September

Security
December

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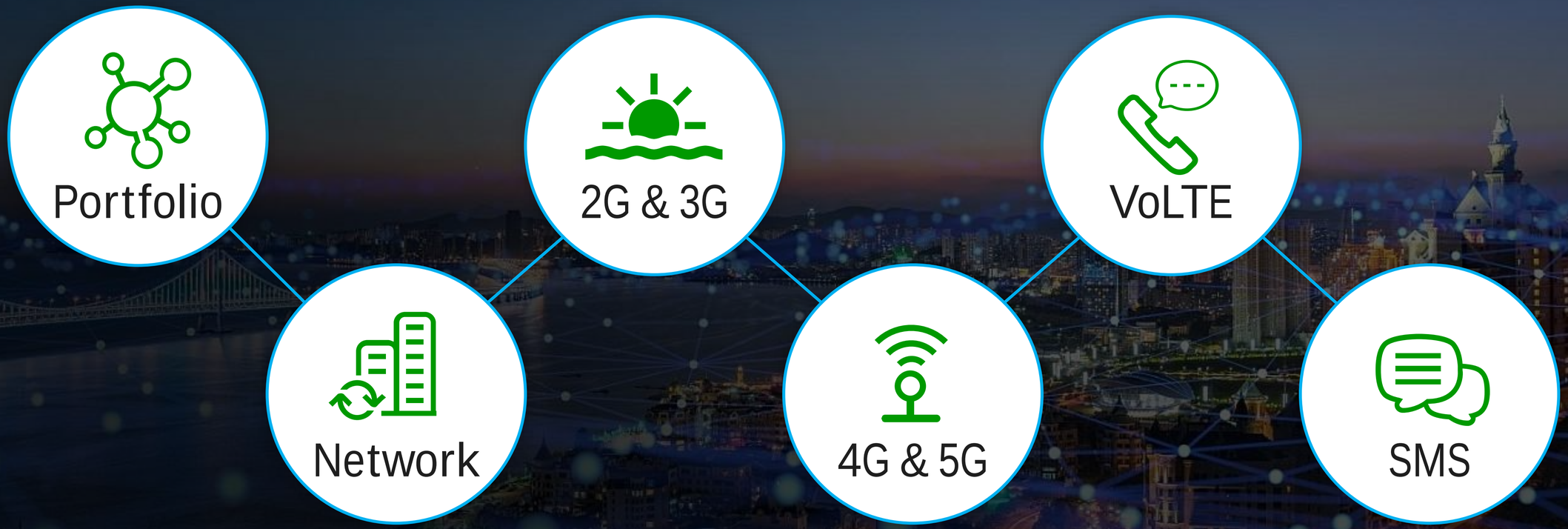
Topics



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Typical IoT solutions

GPS Tracking

Temperature Monitoring

Camera Surveillances

Track & Tracing

Park Sensoring

Fill-Level Measuring

Energy Management

Supply Management

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The full chain of an IoT Solution

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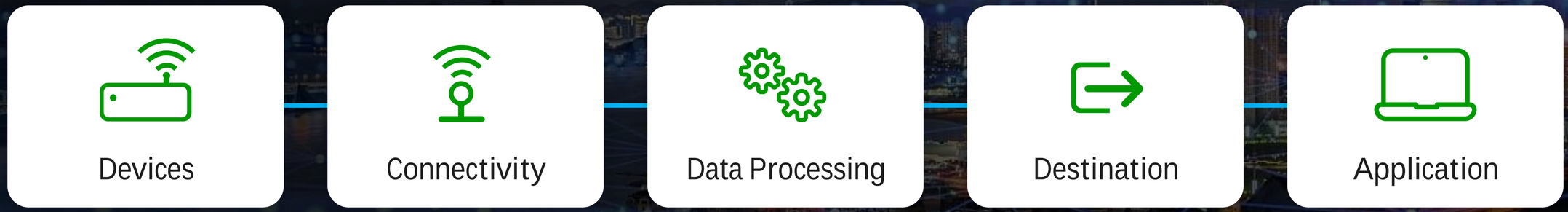

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The different types IoT Propositions

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Freemium

For testing the functionalities and PoC of your IoT solution.

Explorer

A standard and more basic KPN IoT solution. Only available online.

Modular

Build an IoT solution based on our standard 5 building blocks.

Tailored

The tailor-made solution for your dedicated needs.

M2M Corporate

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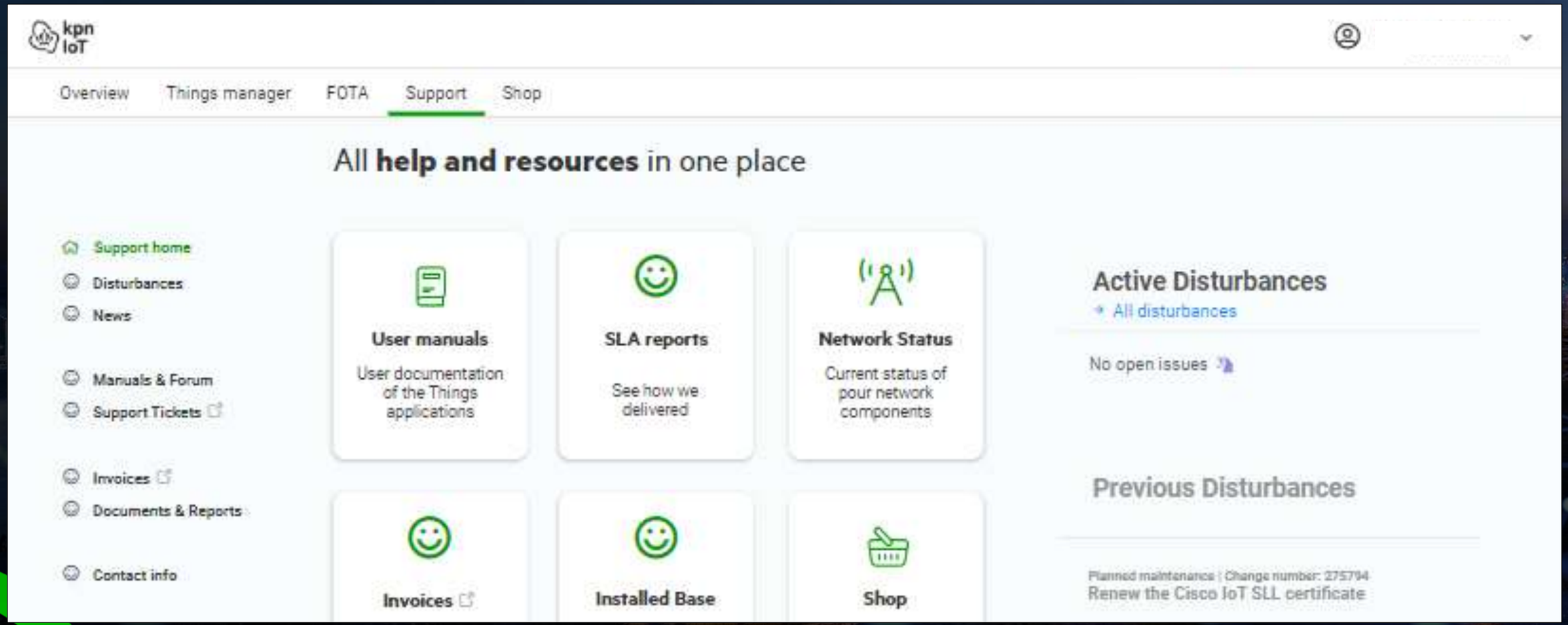
The KPN Things Portal



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Your Takeaway

- Device - network interactions become more relevant.
- KPN invests time and resources in hardware.
- KPN is integrating all IoT solutions in one Things Portal.
- KPN delivers off-the-shelve devices (e.g. routers).

Network Modernization

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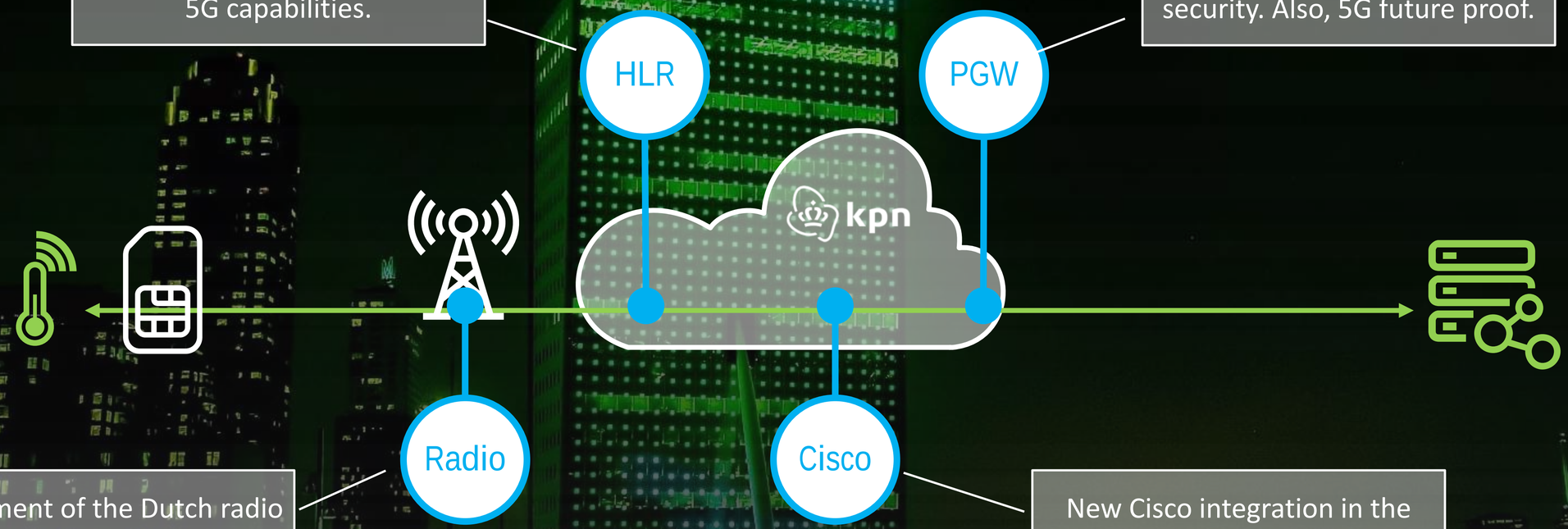
KPN Network modernization

Replacement of HLR/HSS for more capacity and future proof 5G capabilities.

New Core network for more redundancy, capacity and security. Also, 5G future proof.



Replacement of the Dutch radio network for a stronger and more stable signal.

New Cisco integration in the core network for stability and opening new possibilities.

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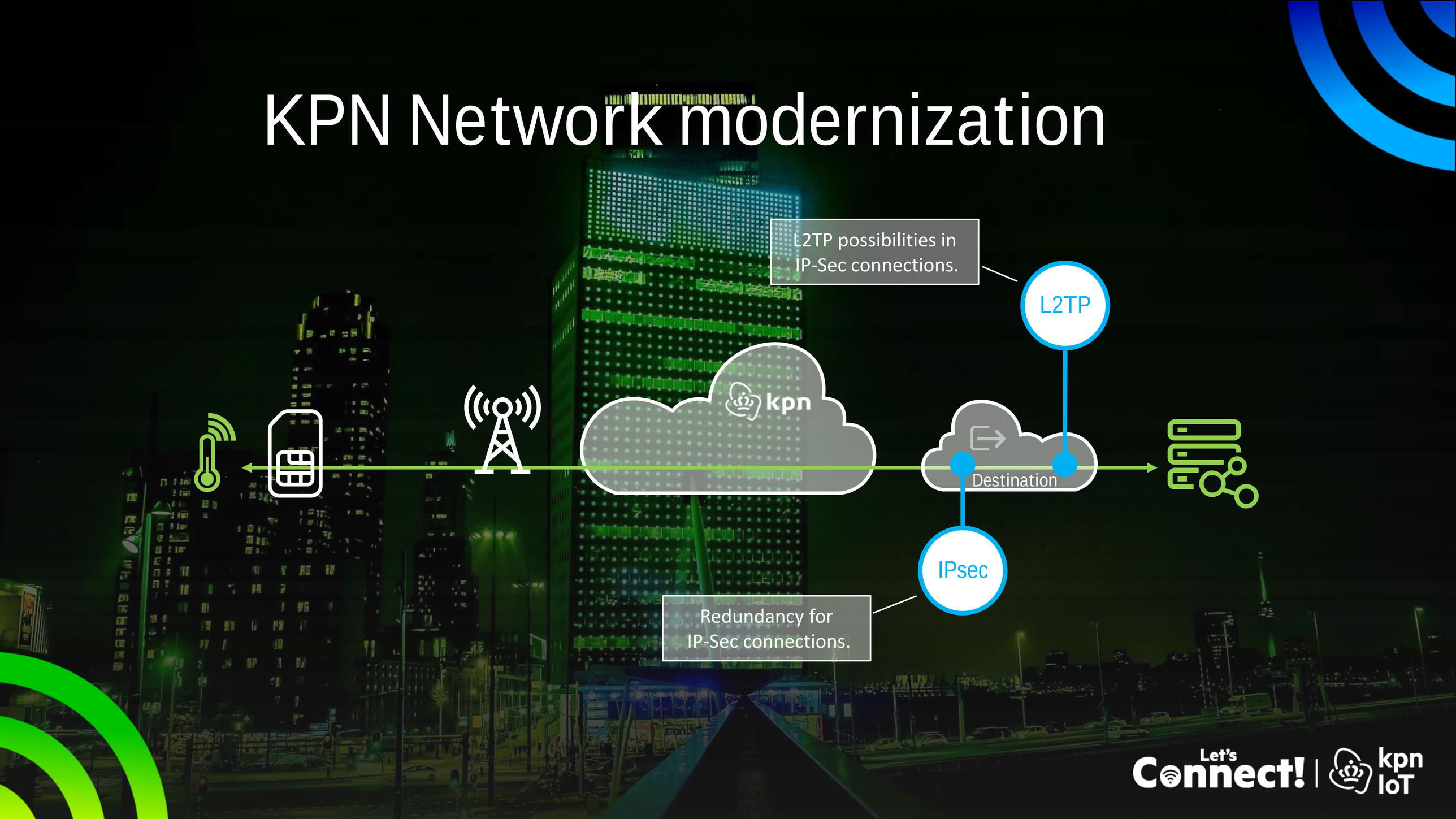
KPN Network modernization



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Your Takeaway

- Extra functionalities in our Destinations to your BackEnd.
- A lot of work behind the scenes, to keep delivering a stable and future-proof service.

Sunset of 2G & 3G Networks

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Sunset of 2G & 3G

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Sunsets of Networks

2020 — 2025

3G sunset

2022 — 2030 ?

2G sunset

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3G sunset April 2022

2G sunset December 2025

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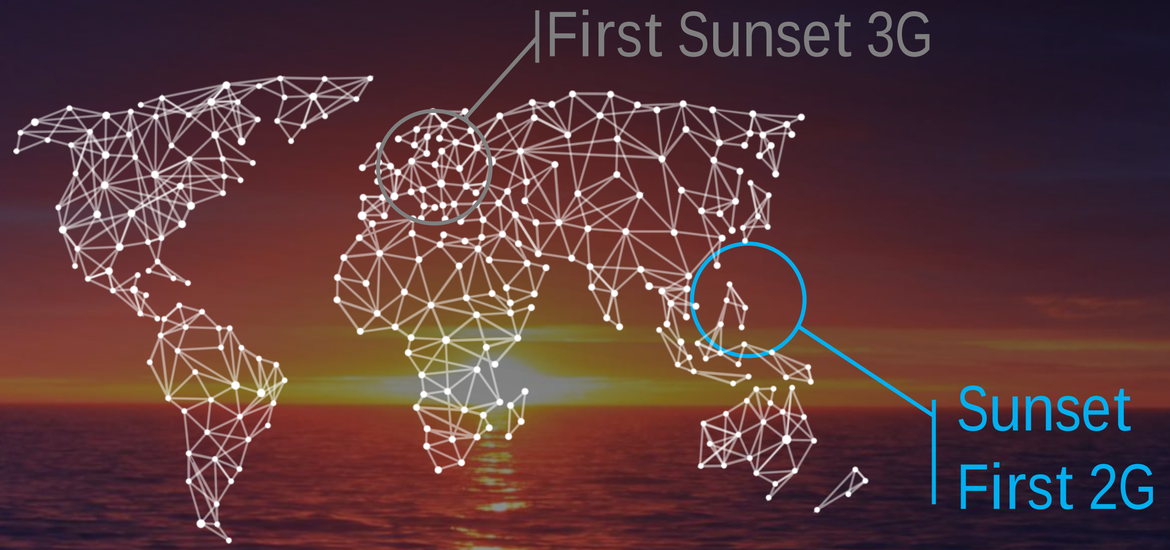
Sunsets of Networks

2020 — 2030

3G sunset

2017 — 2025

2G sunset



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Sunsets of Networks

Sunset
2G & 3G

First Sunset 3G

Sunset
First 2G

2019 — 2025
3G sunset

2017 — 2025
2G sunset

T-Mobile	verizon	AT&T
3G sunset ~~2021~~	3G sunset 2019	3G sunset 2022
2G sunset 2024	2G sunset 2018	2G sunset 2017

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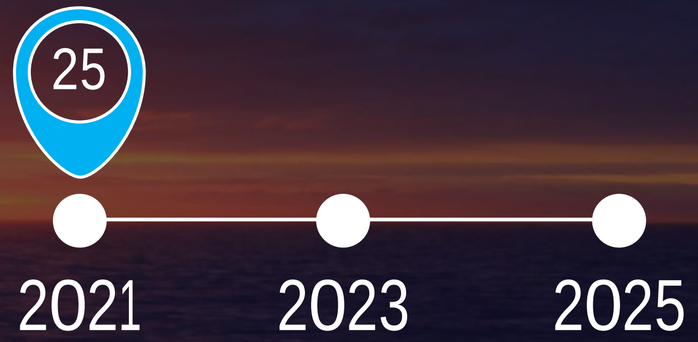
2G Sunsets in the World



All operators in that country have phased out 2G

Some operators in that country have phased out 2G

Operators in that country haven't phased put 2G yet

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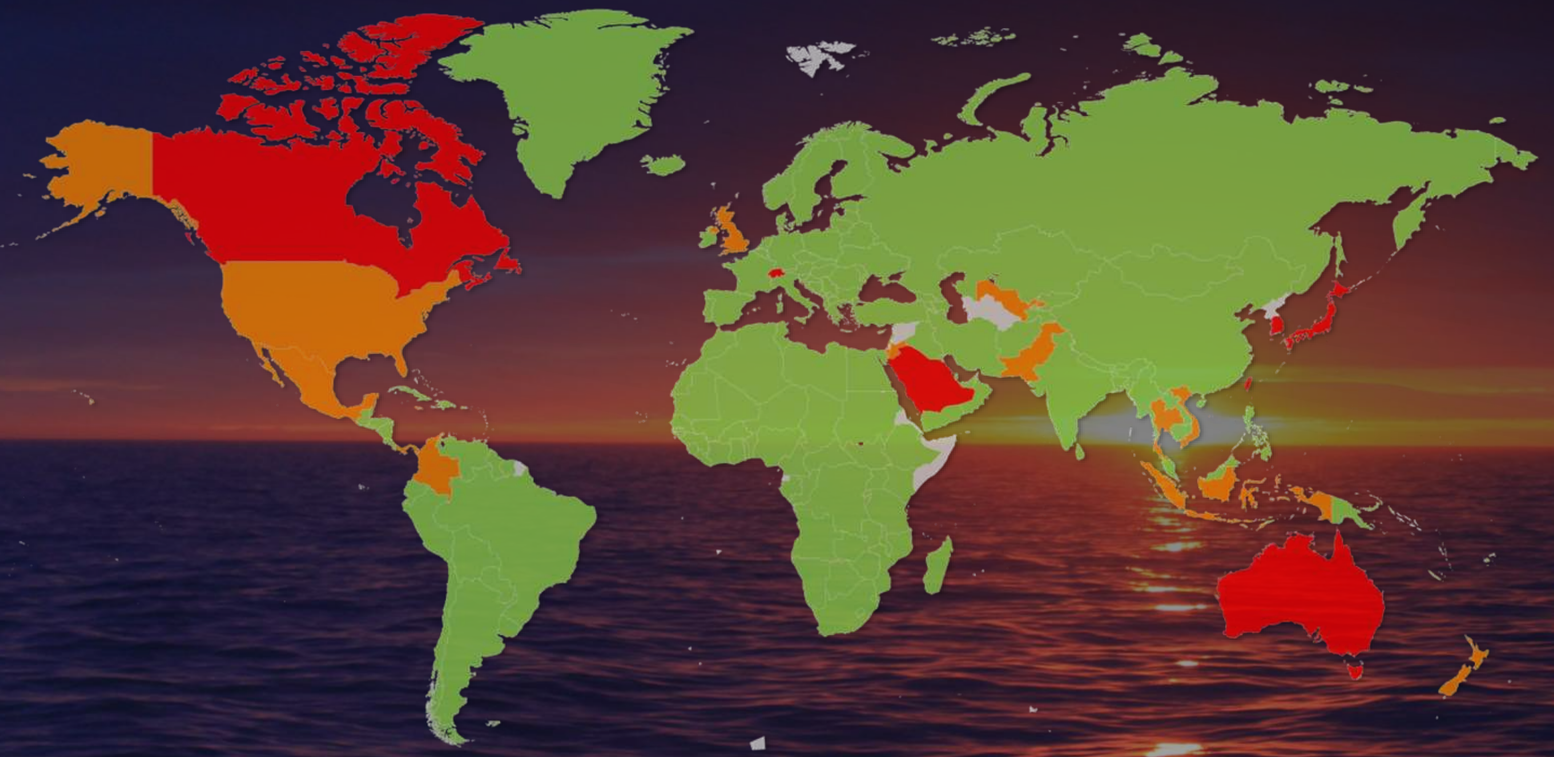
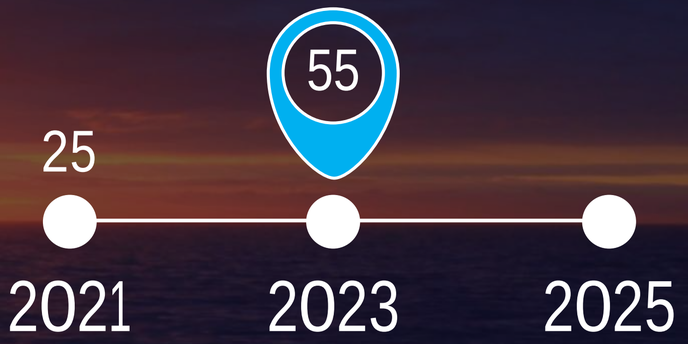
2G Sunsets in the World





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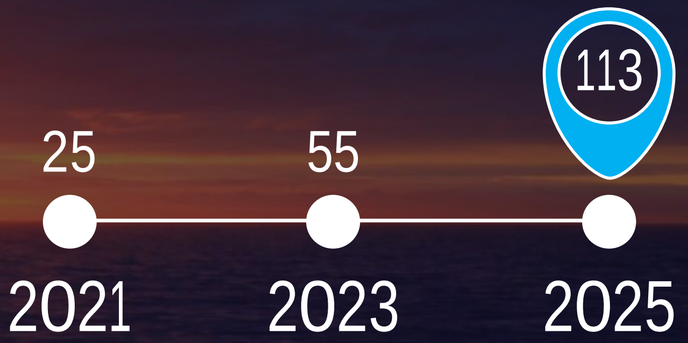

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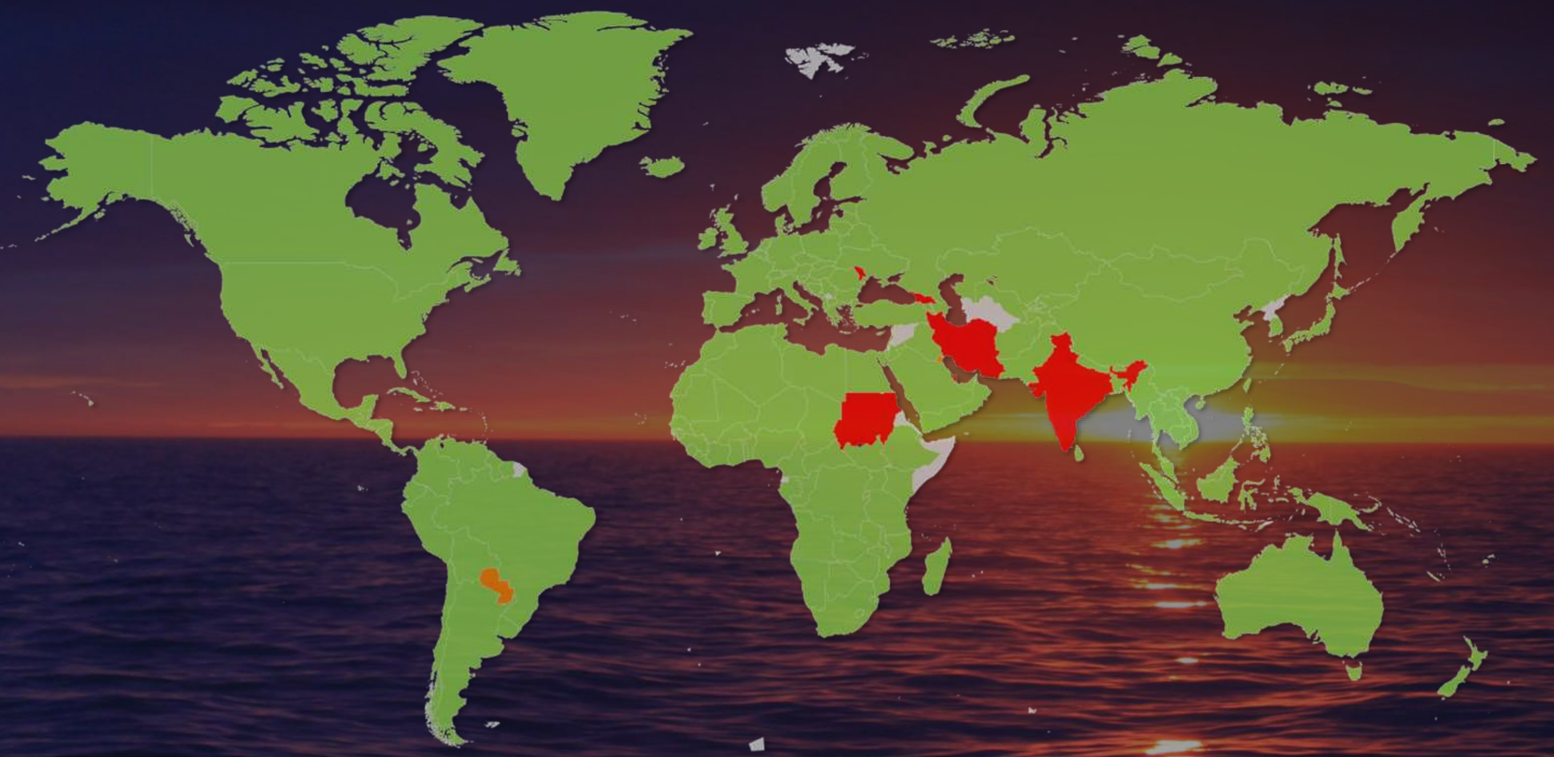
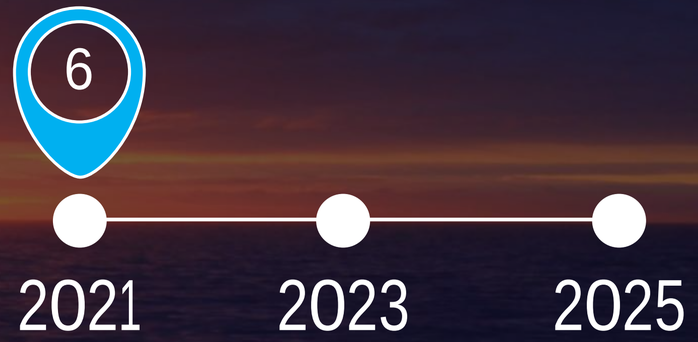
3G Sunsets in the World





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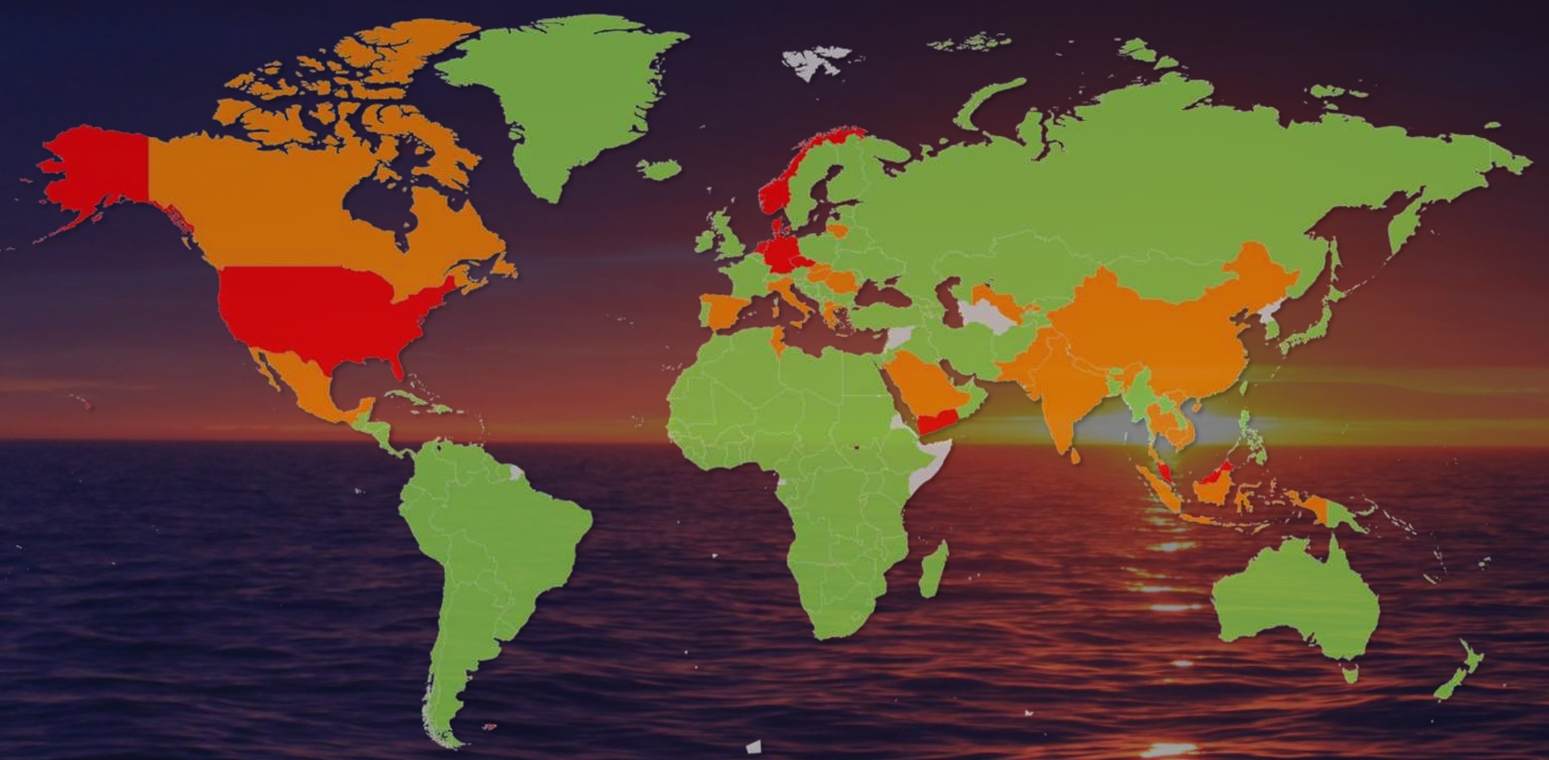
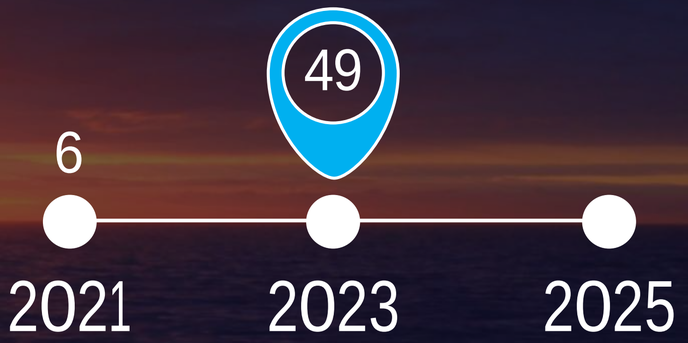
3G Sunsets in the World





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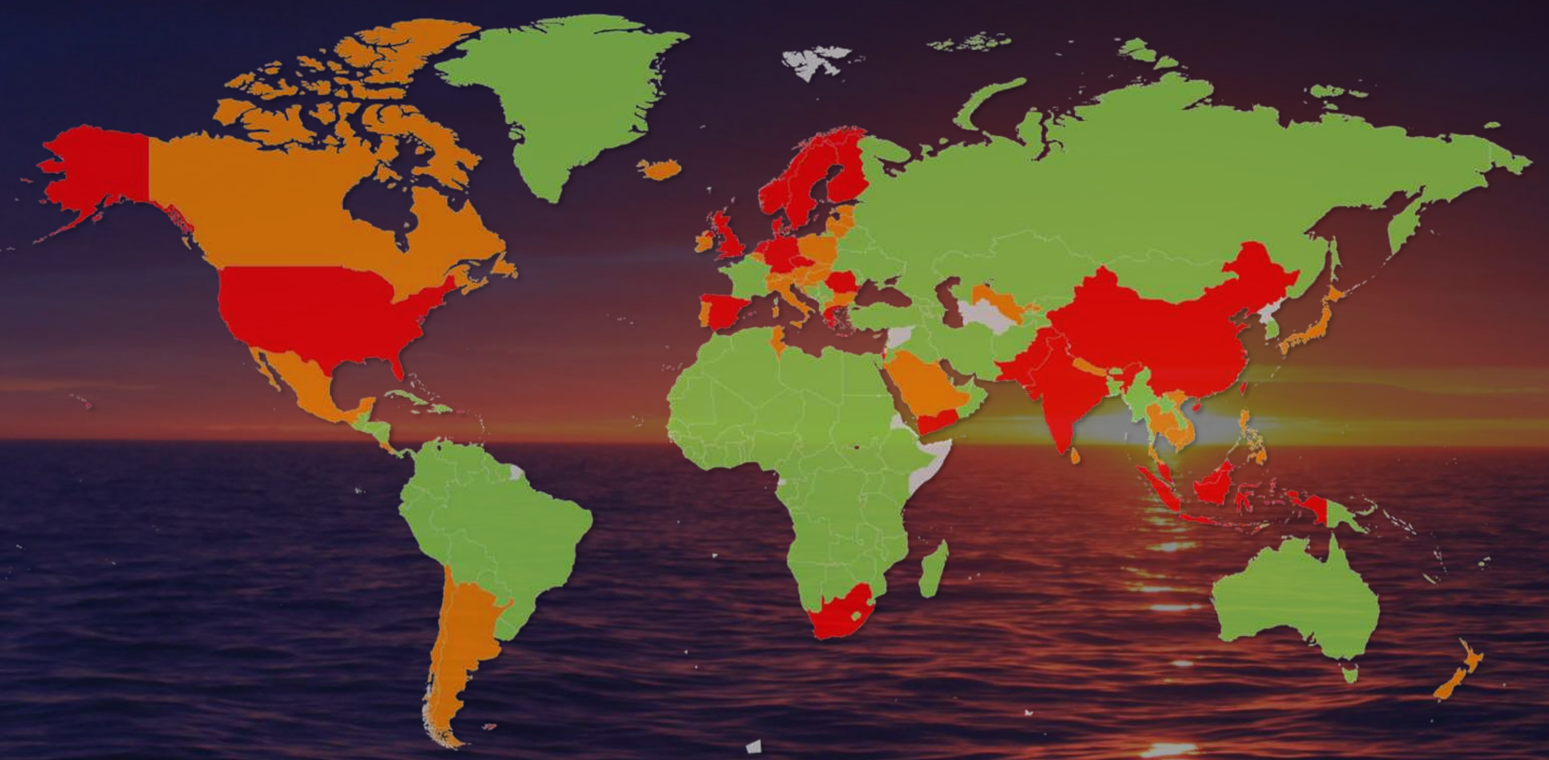
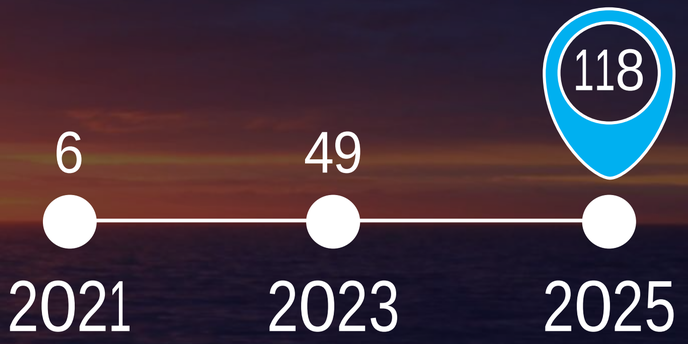
3G Sunsets in the World





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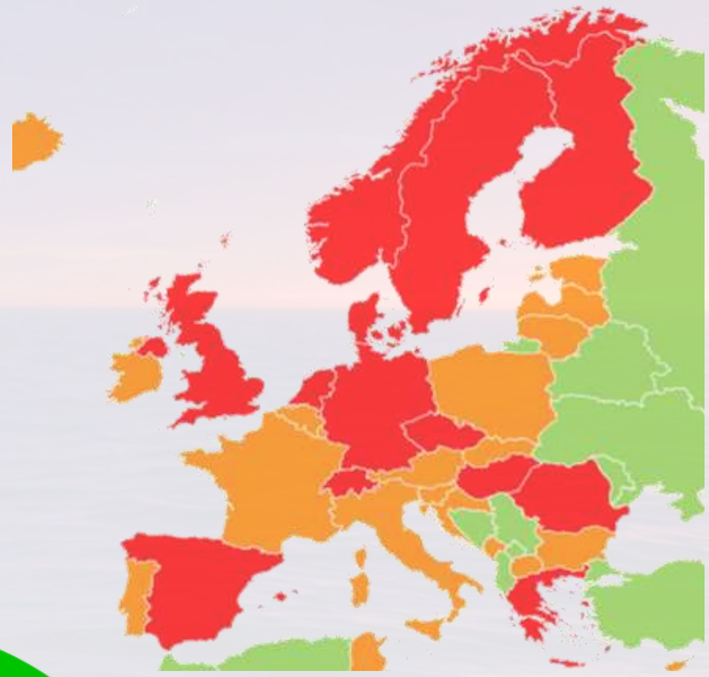
Your Takeaway



- 2G & 3G Sunsets are in full execution.
- New technology is required.
- Detailed information on the Service Portal.

4G & 5G roll-out

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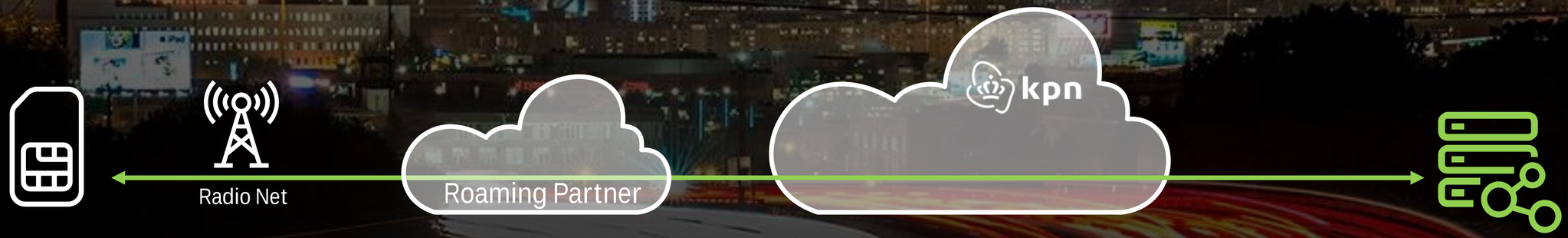
Rethink the communication-flows



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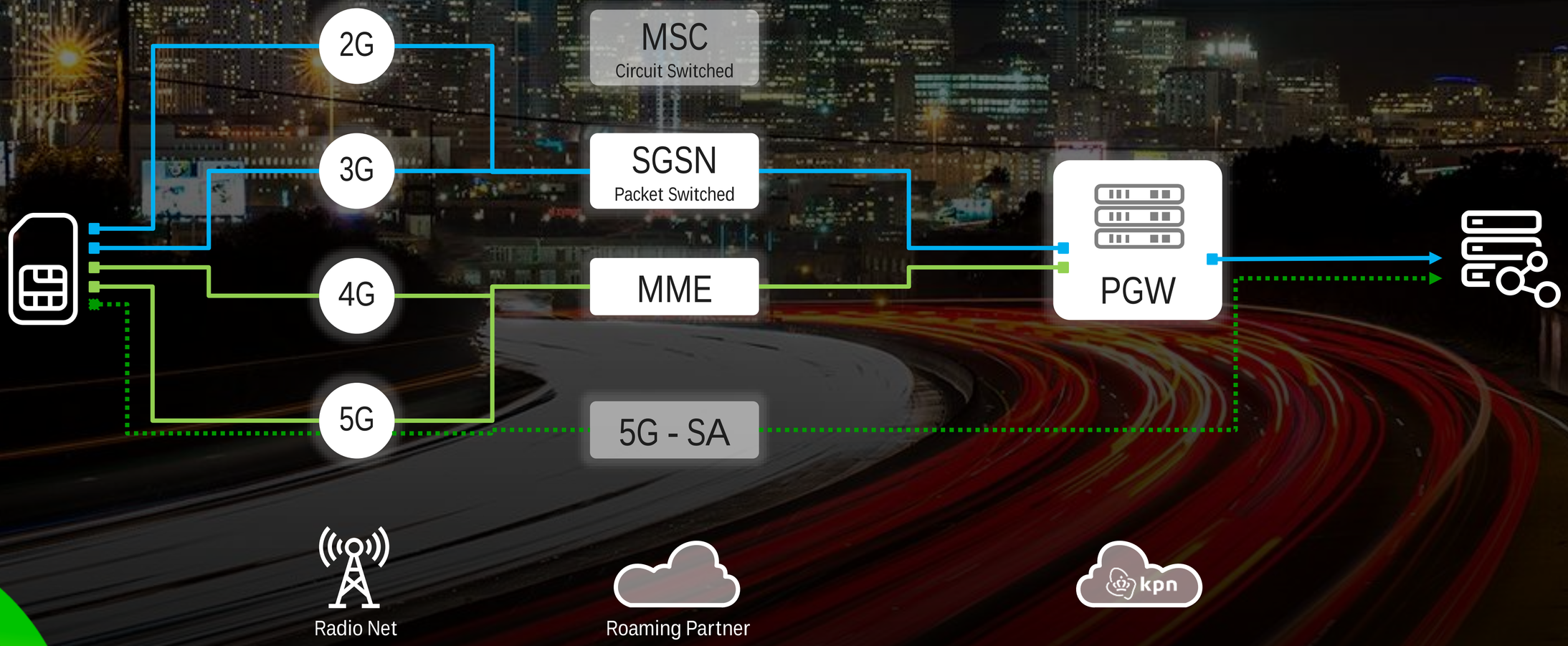
The data-flow



SGSN = Serving GPRS Support Node

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The data-flow

MME = Mobility Management Entity

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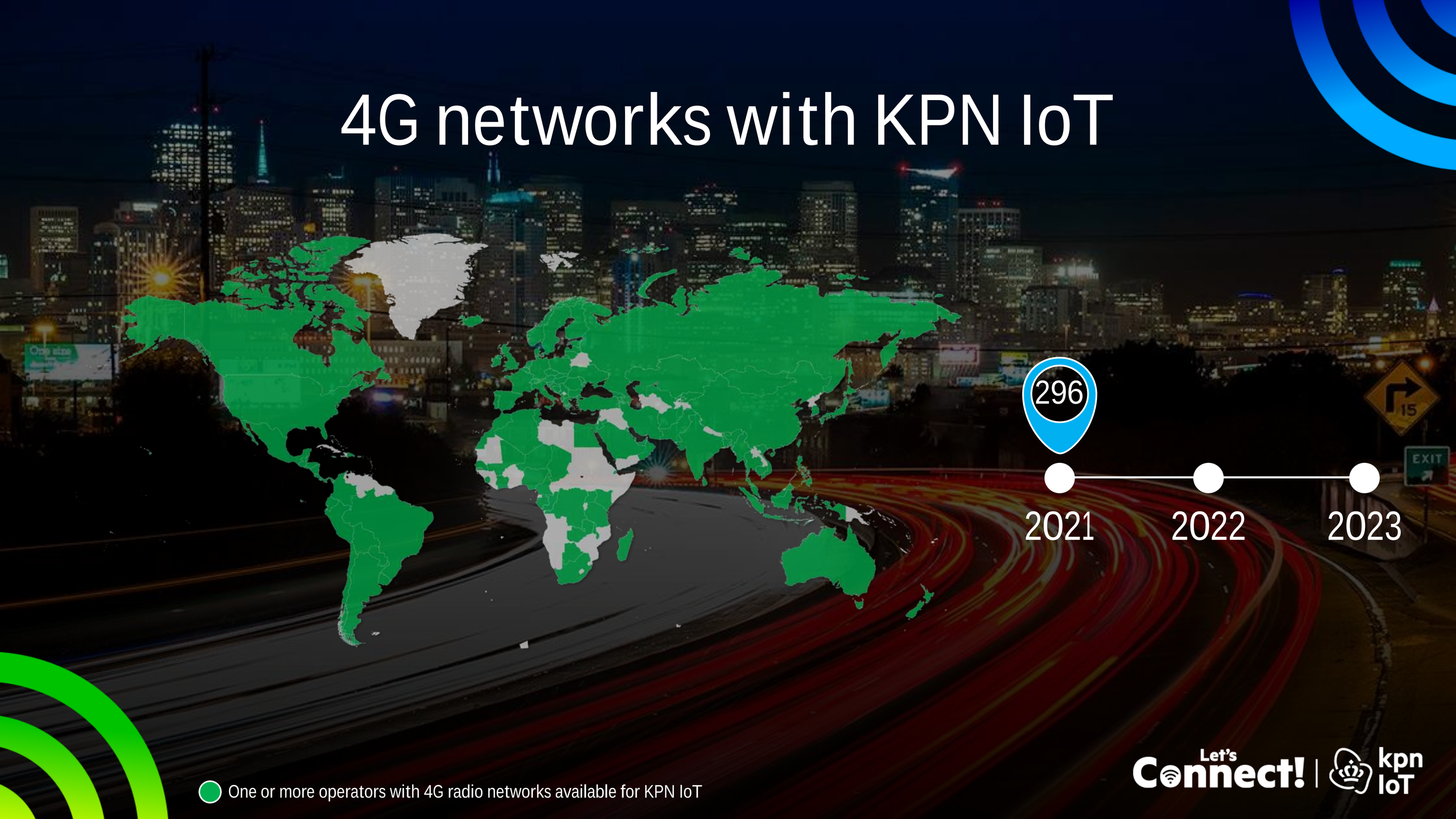
4G networks with KPN IoT



One or more operators with 4G radio networks available for KPN IoT

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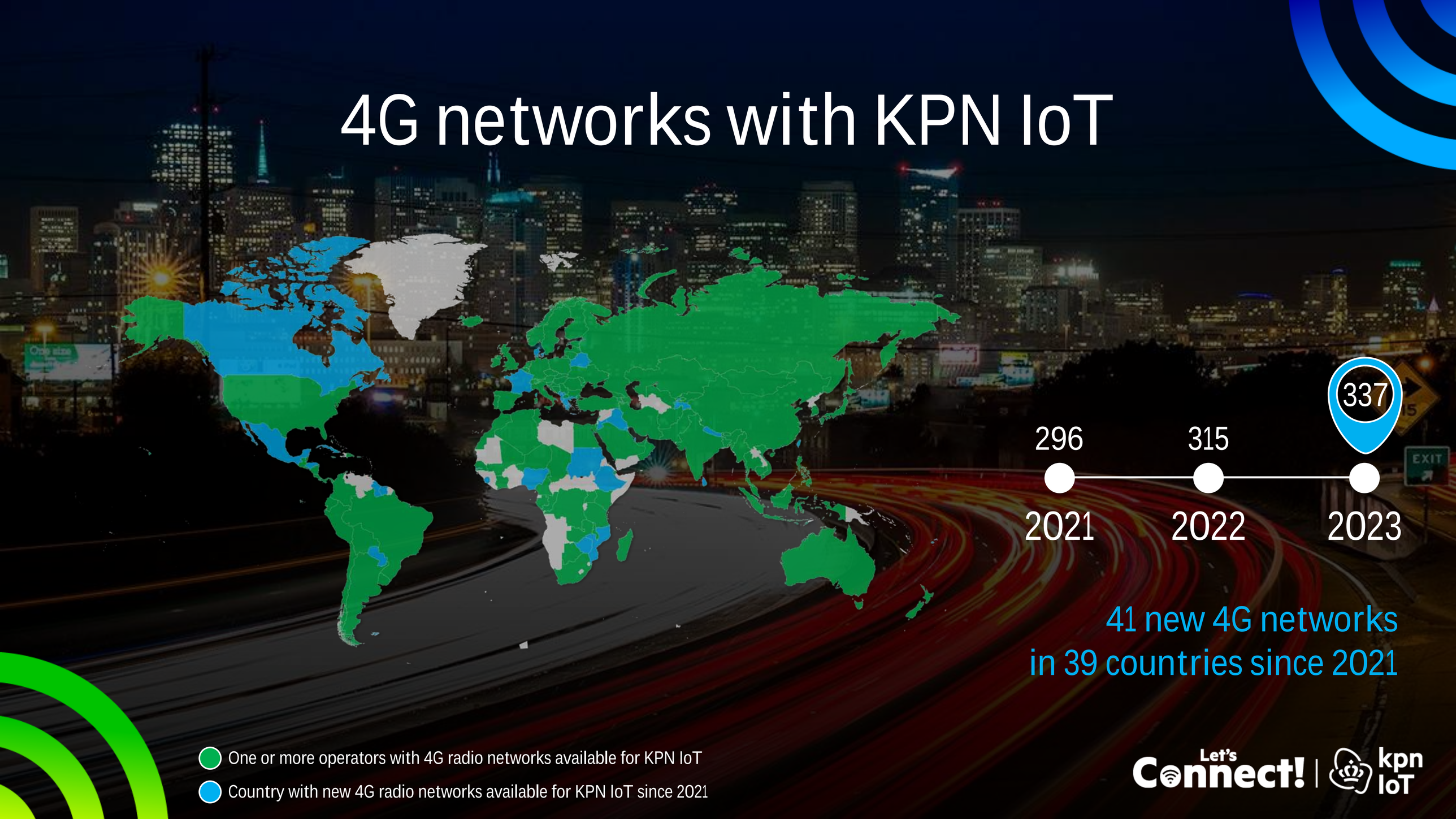
4G networks with KPN IoT



41 new 4G networks
in 39 countries since 2021

One or more operators with 4G radio networks available for KPN IoT

Country with new 4G radio networks available for KPN IoT since 2021

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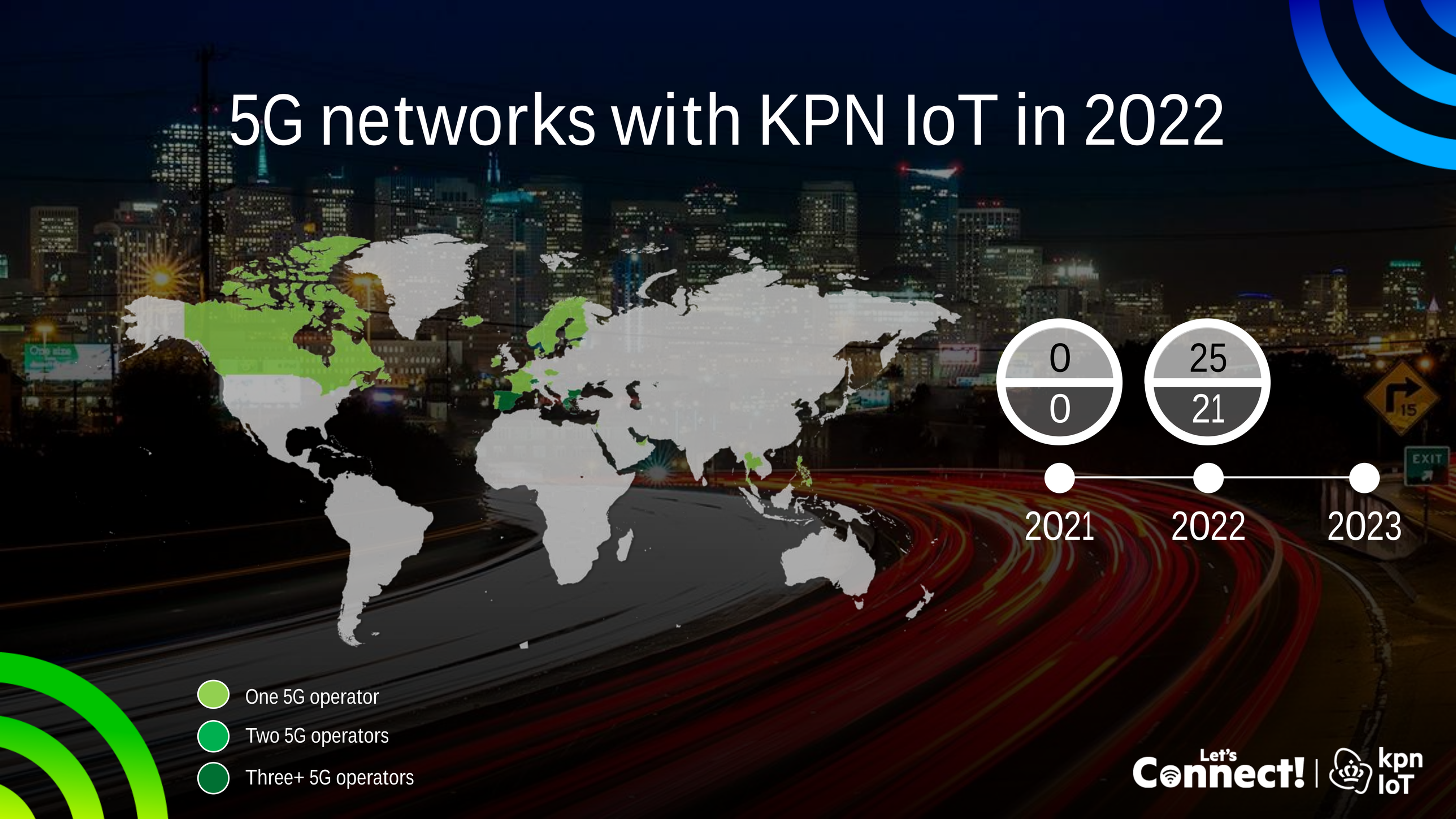
5G networks with KPN IoT in 2022



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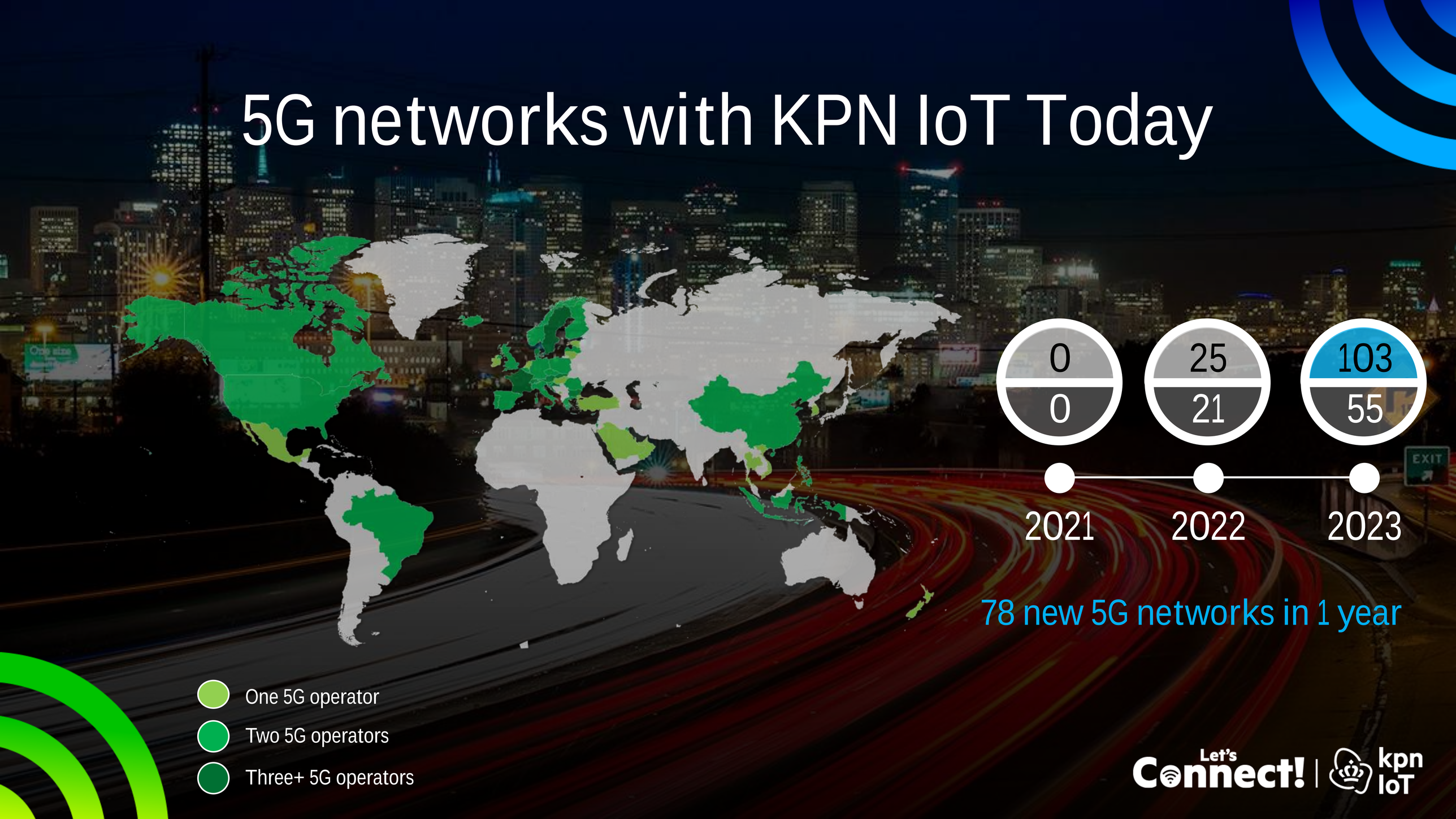
5G networks with KPN IoT Today



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Your Takeaway

5G Ready

- KPN invests heavily in worldwide 4G & 5G coverage.
- Detailed information on the IoT Service Portal.

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Voice with VoLTE

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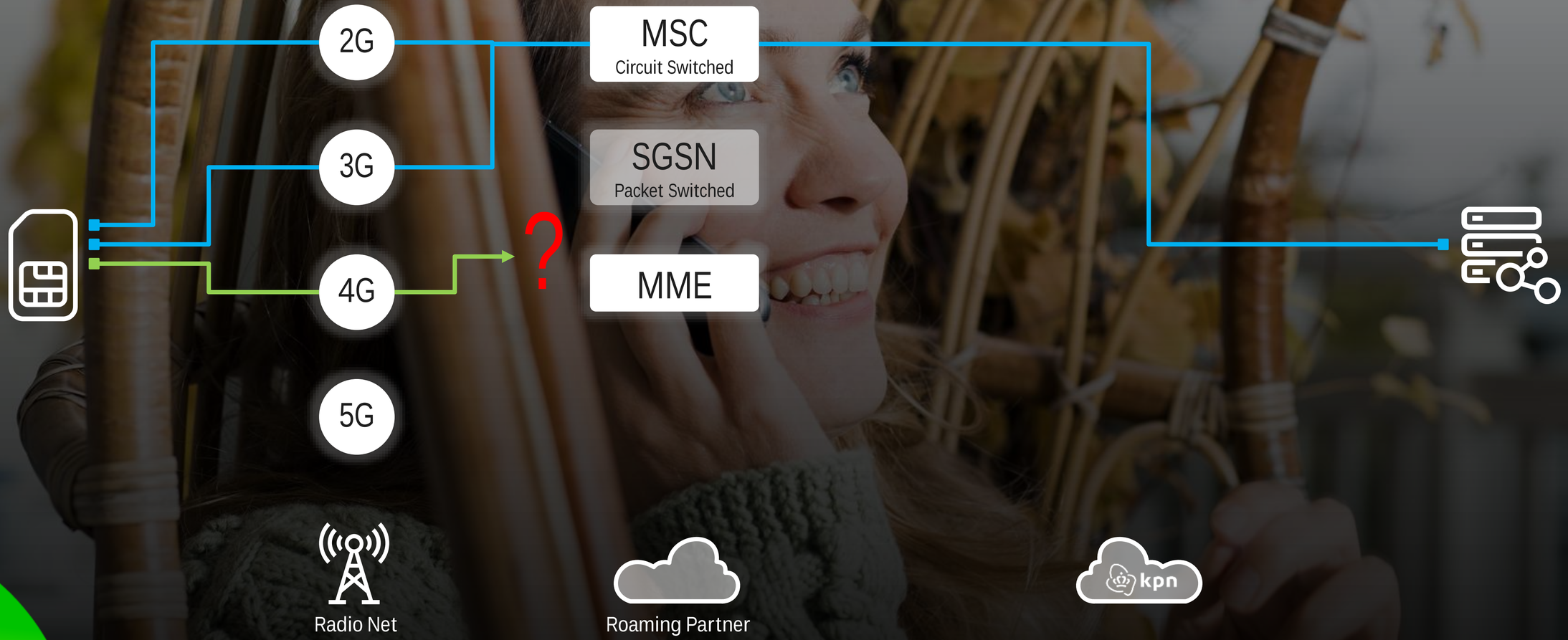
The voice-flow



MSC = Mobile Switching Center

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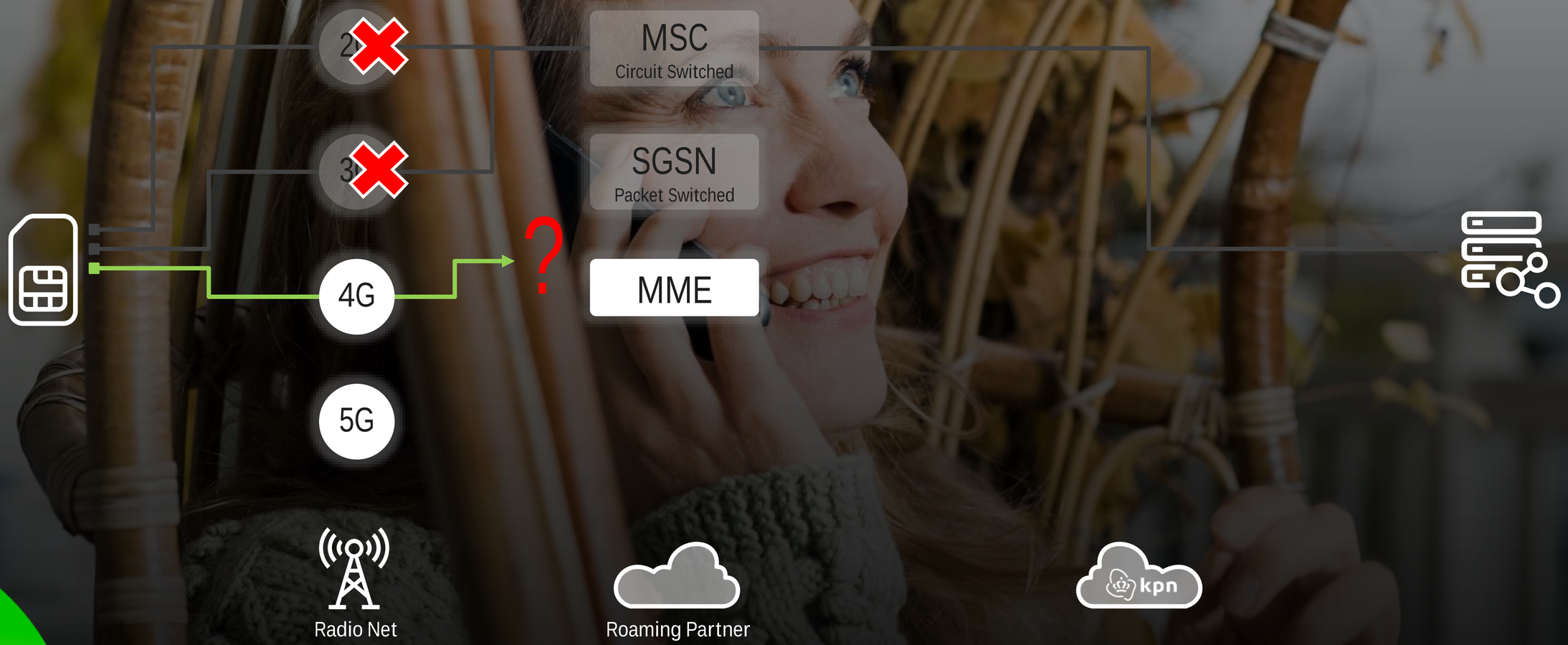
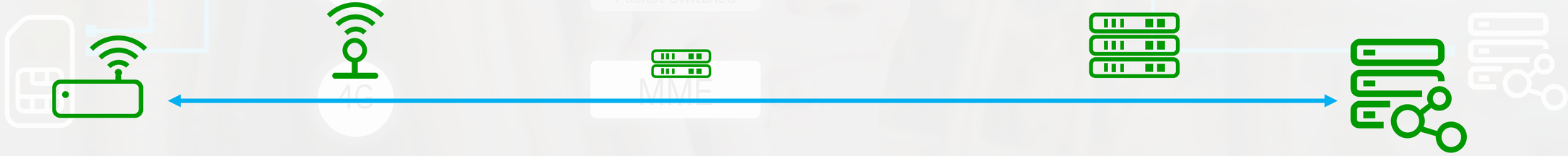
The voice-flow



The VoLTE-flow

VoLTE stands for Voice over LTE, which is the voice capability for 4G (and 5G) radio access, based on an IP data-flow.



Radio Net

Roaming Partner

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IMS = IP Multimedia Subsystem

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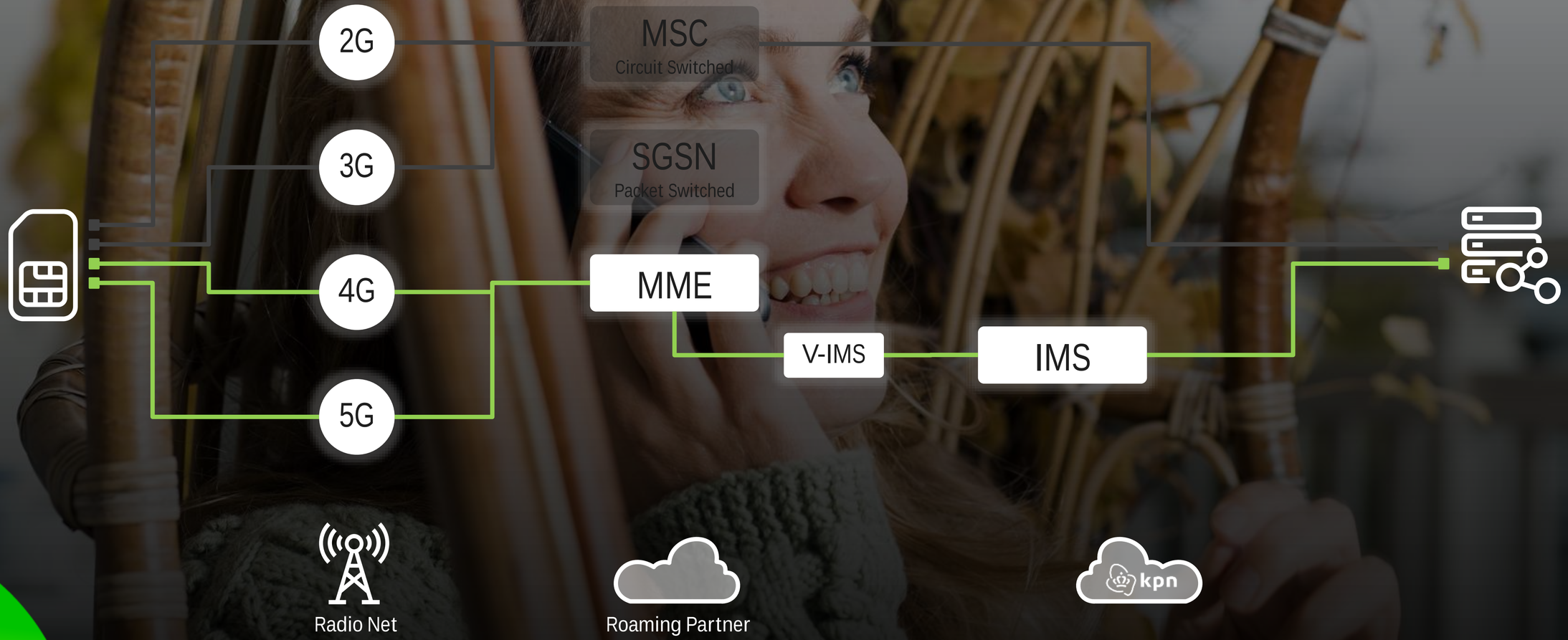
The VoLTE-flow



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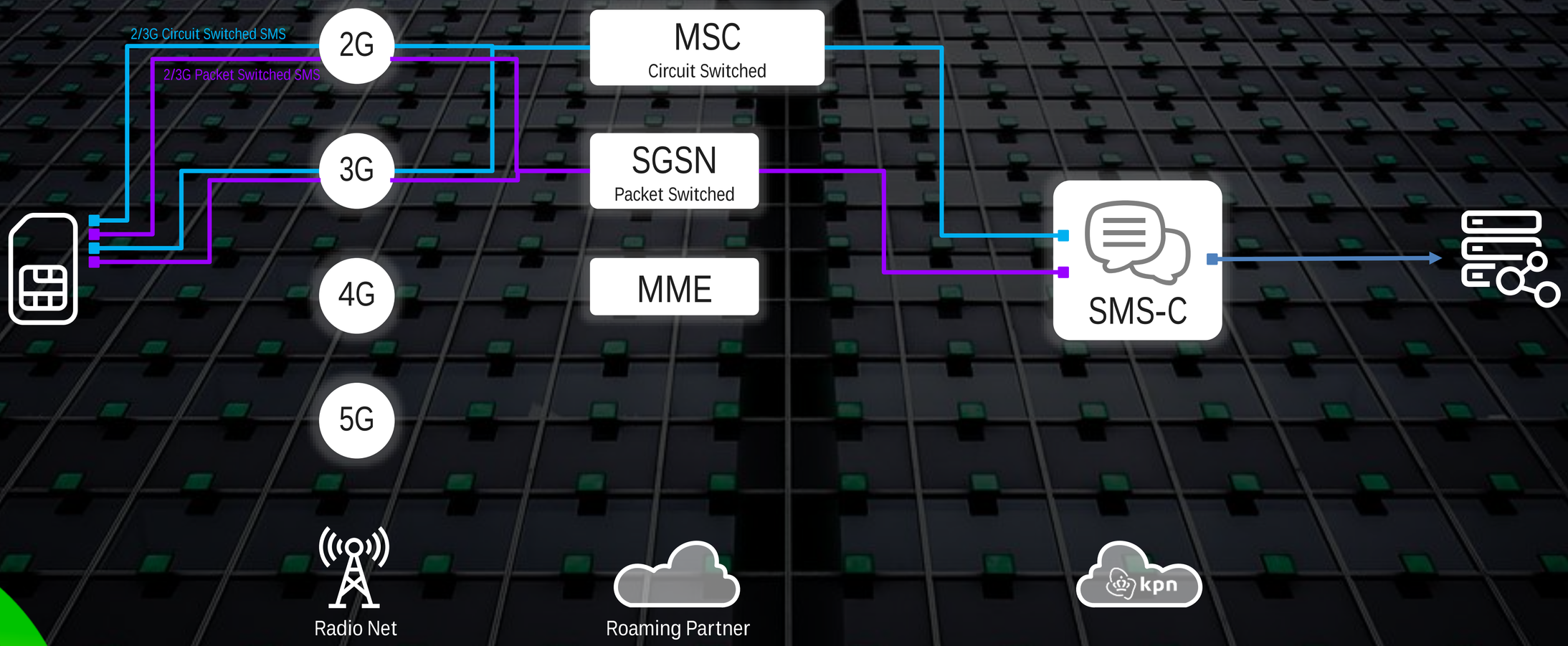
Your Takeaway

- KPN is working on the VoLTE-project.
- KPN introduces VoLTE in Q1 2024.
- First in The Netherlands, then rolling out international.

Use cases with SMS

The SMS-flow



SMS-C = Short Message Service Center

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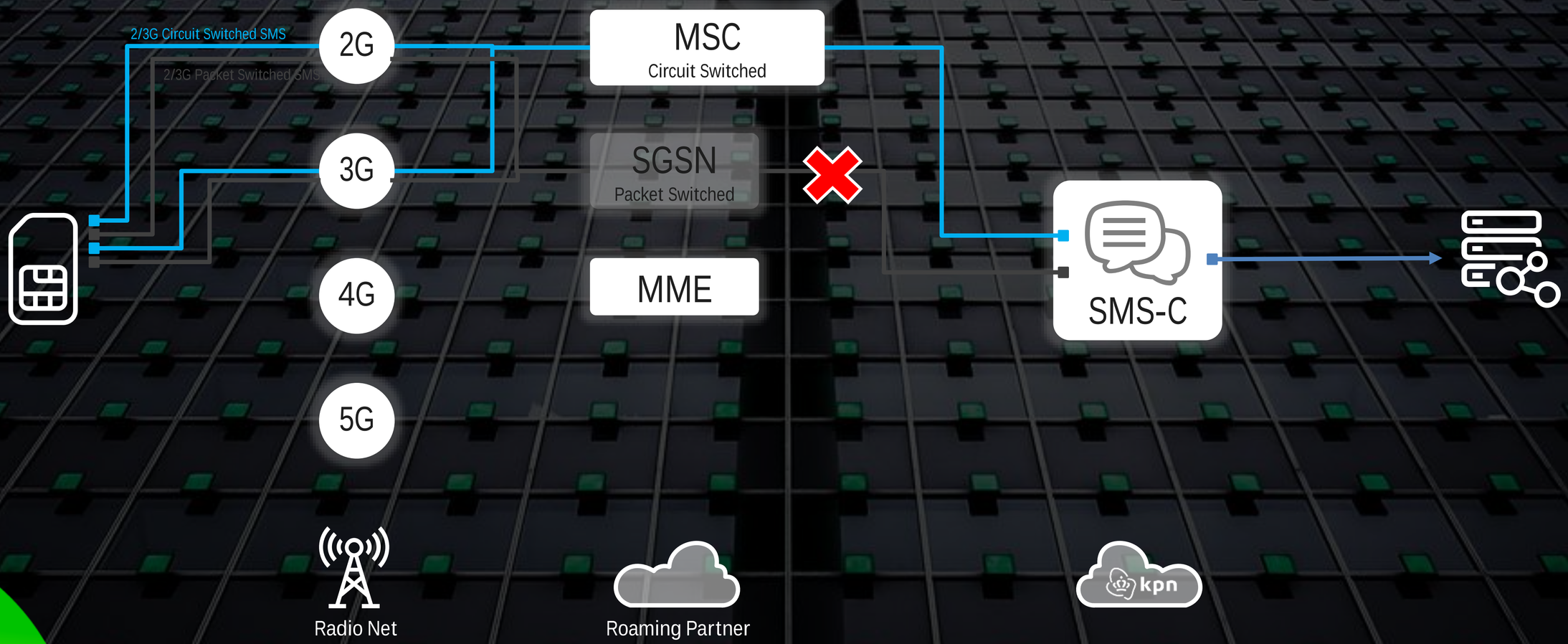
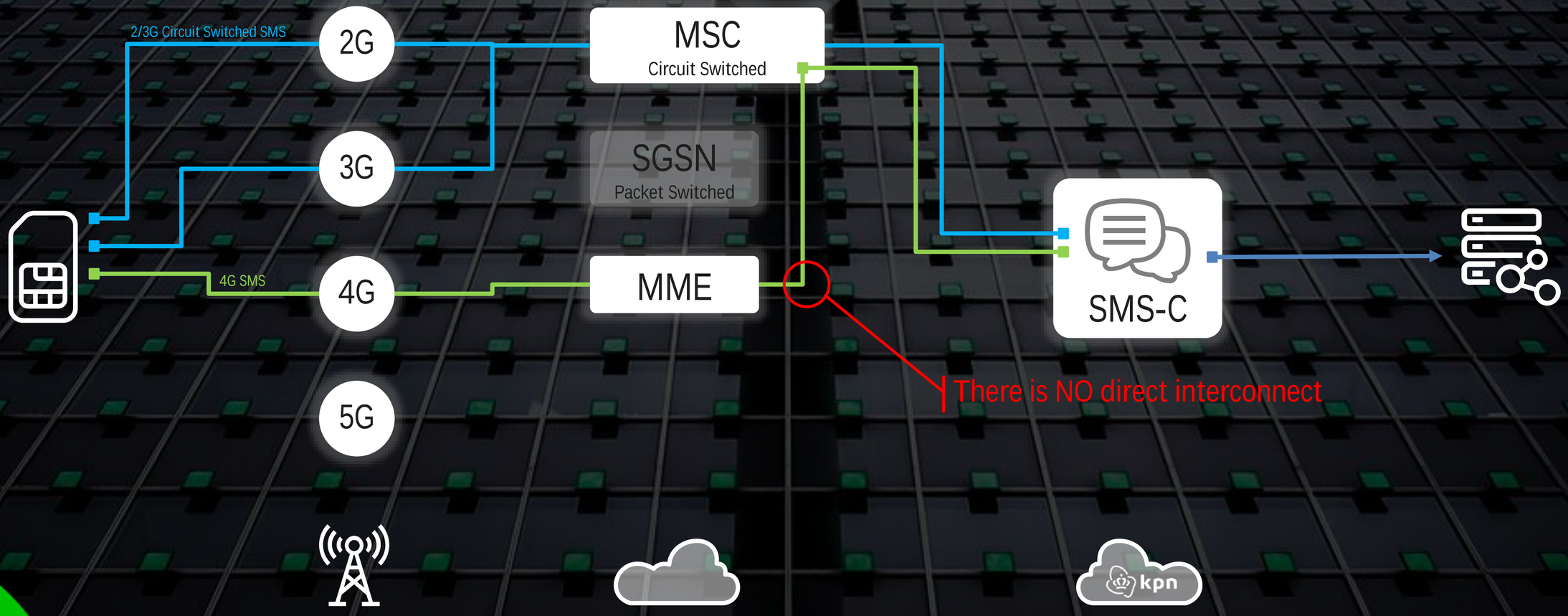
The SMS-flow


2/3G Circuit Switched SMS
2/3G Packet Switched SMS
2G
3G
4G
5G
MSC
Circuit Switched
SGSN
Packet Switched
MME
SMS-C
Radio Net
Roaming Partner
kpn

The SMS-flow



MME = Mobility Management Entity

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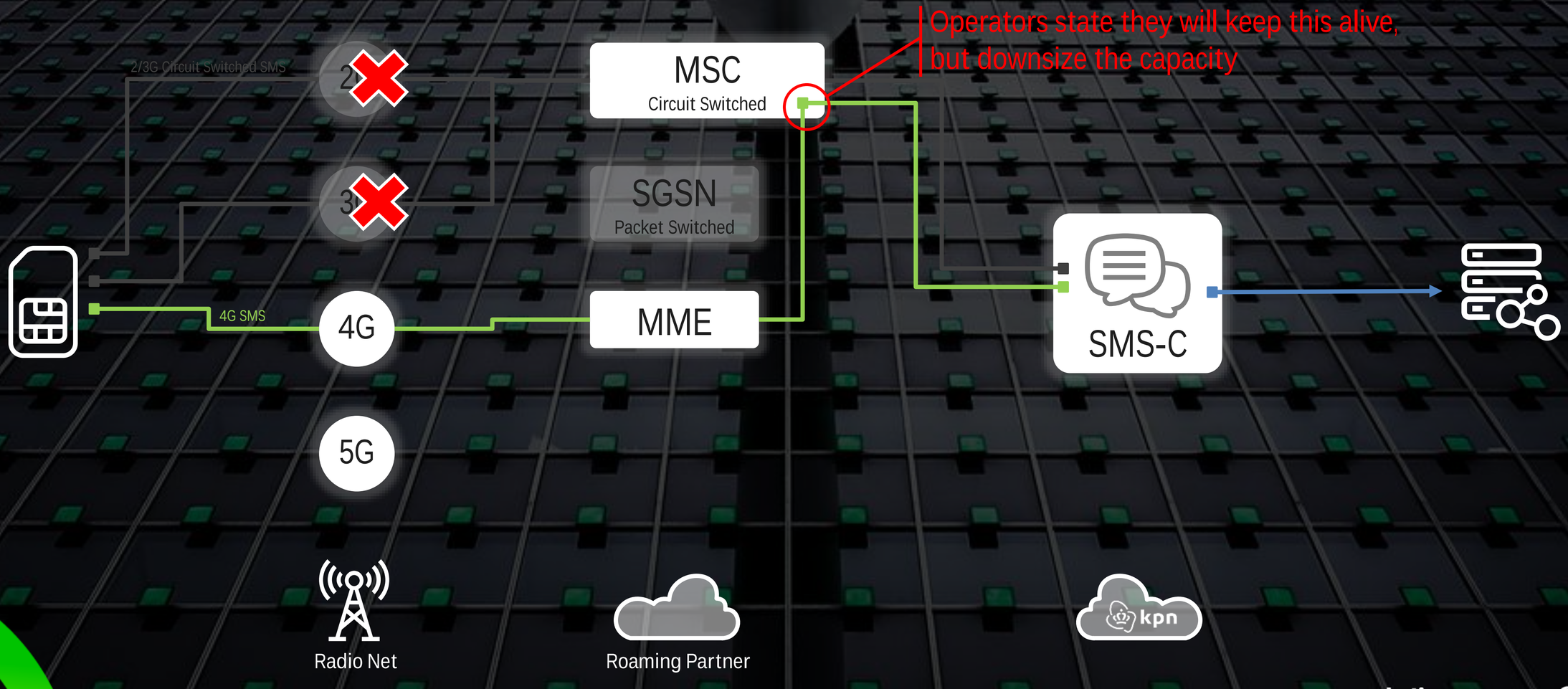
The SMS-flow



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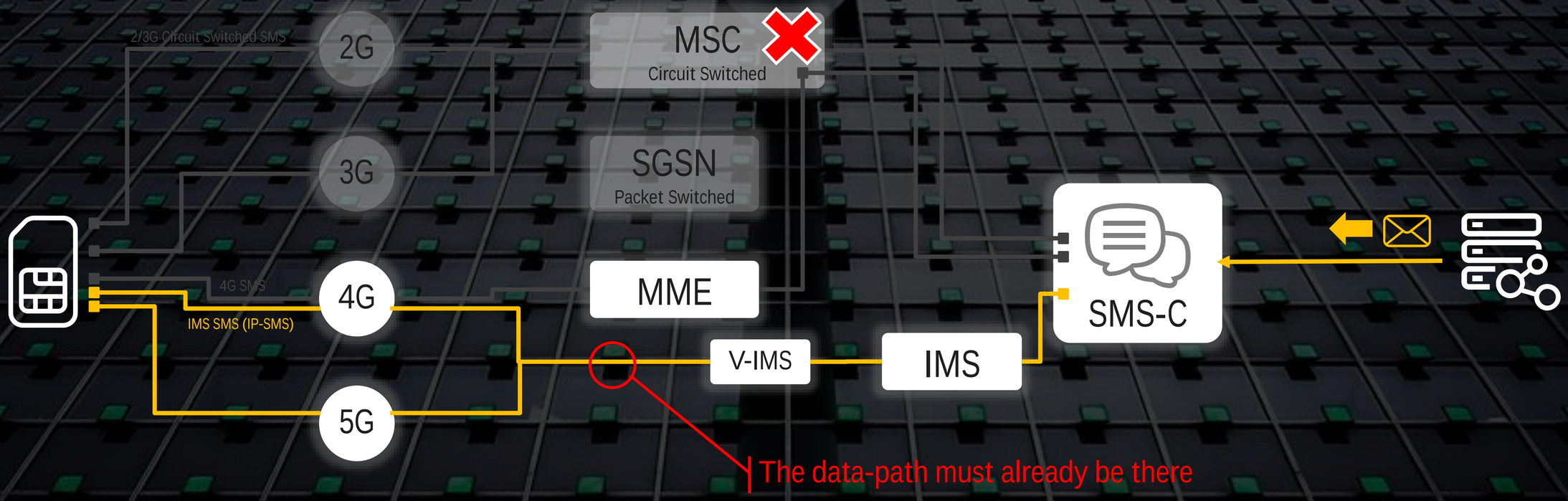
IMS can NOT deliver a Wake-Up SMS



IMS = IP Multimedia Subsystem

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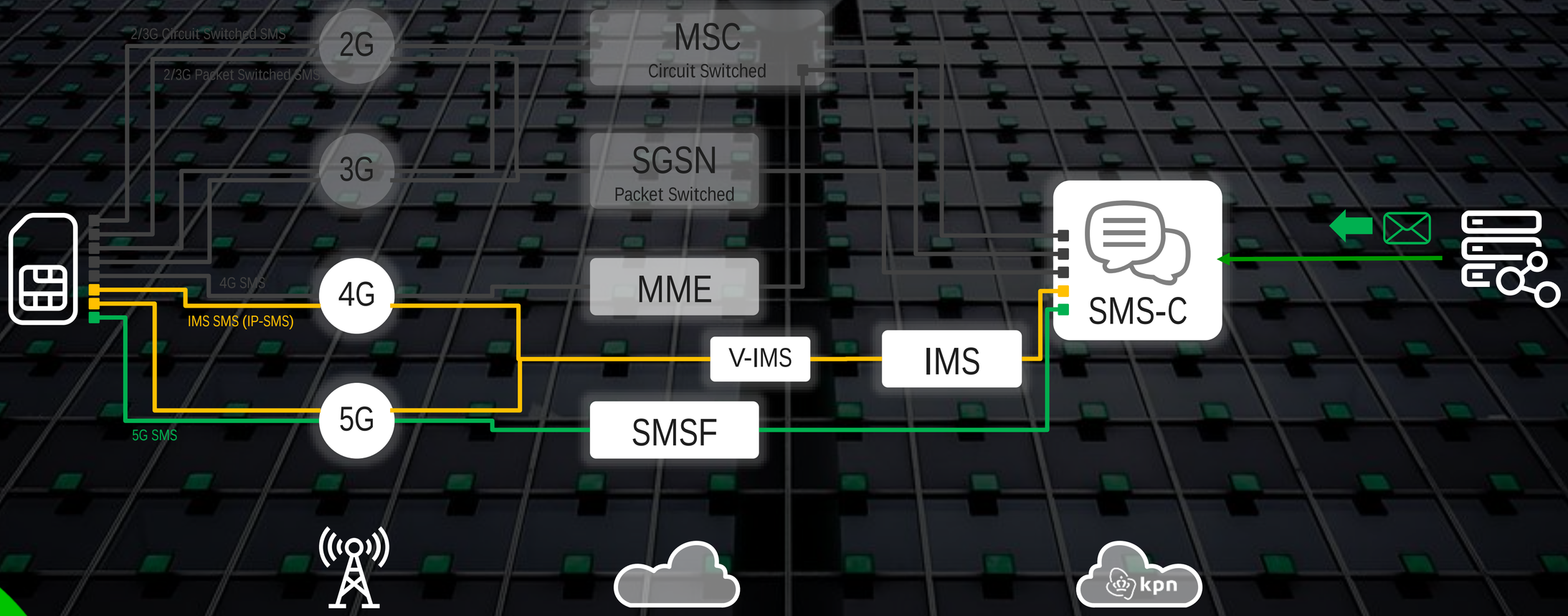
5G will make this possible again



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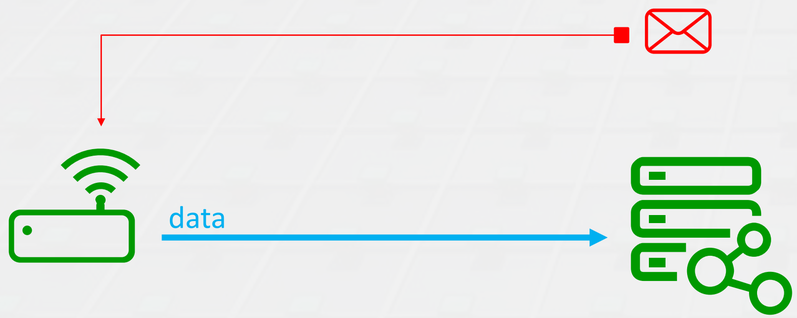
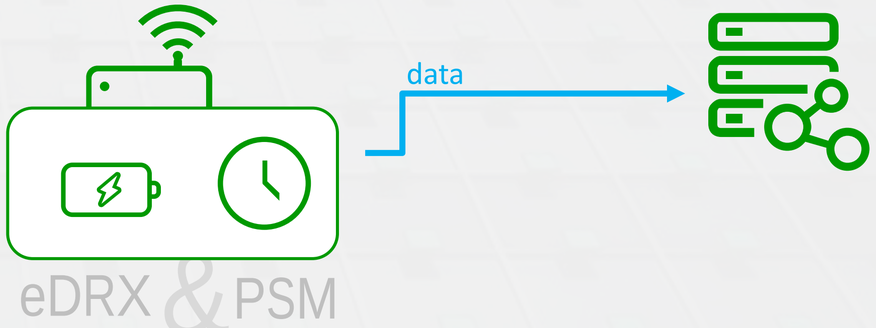
How to start a data-session?



The old SMS Wake Up Way



The new Device Initiative Way

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Your Takeaway

- 2G & 3G Sunsets require new ways to set-up a connection
- Operators will for now keep the 4G-SMS flow available
- KPN promotes the 5G SMS-flow towards the GSMA

Recap

Portfolio

Our new IoT chain and service in the Things Portal.

2G & 3G

Worldwide sunsets are becoming a reality.

VoLTE

Introduction of VoLTE beginning next year (2024).

Network

Modernization of the KPN network for 5G Core.

4G & 5G

KPN expansion of available 4G & 5G networks.

SMS

Sunsets have impact on SMS Wake-up messages.

Thank you for joining us!

Our next Webinar is about eSIM & RSP
22nd of June 2023

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