

FTTH CONFERENCE

2019

12-14 MARCH



Amsterdam
The Netherlands



Fibre to the Home
Council Europe

*we connect technology,
policy and finance*

www.ftthconference.eu

5G and FTTH: The Value of Convergence

Raf Meersman, CEO Comsof

March 13, 2019

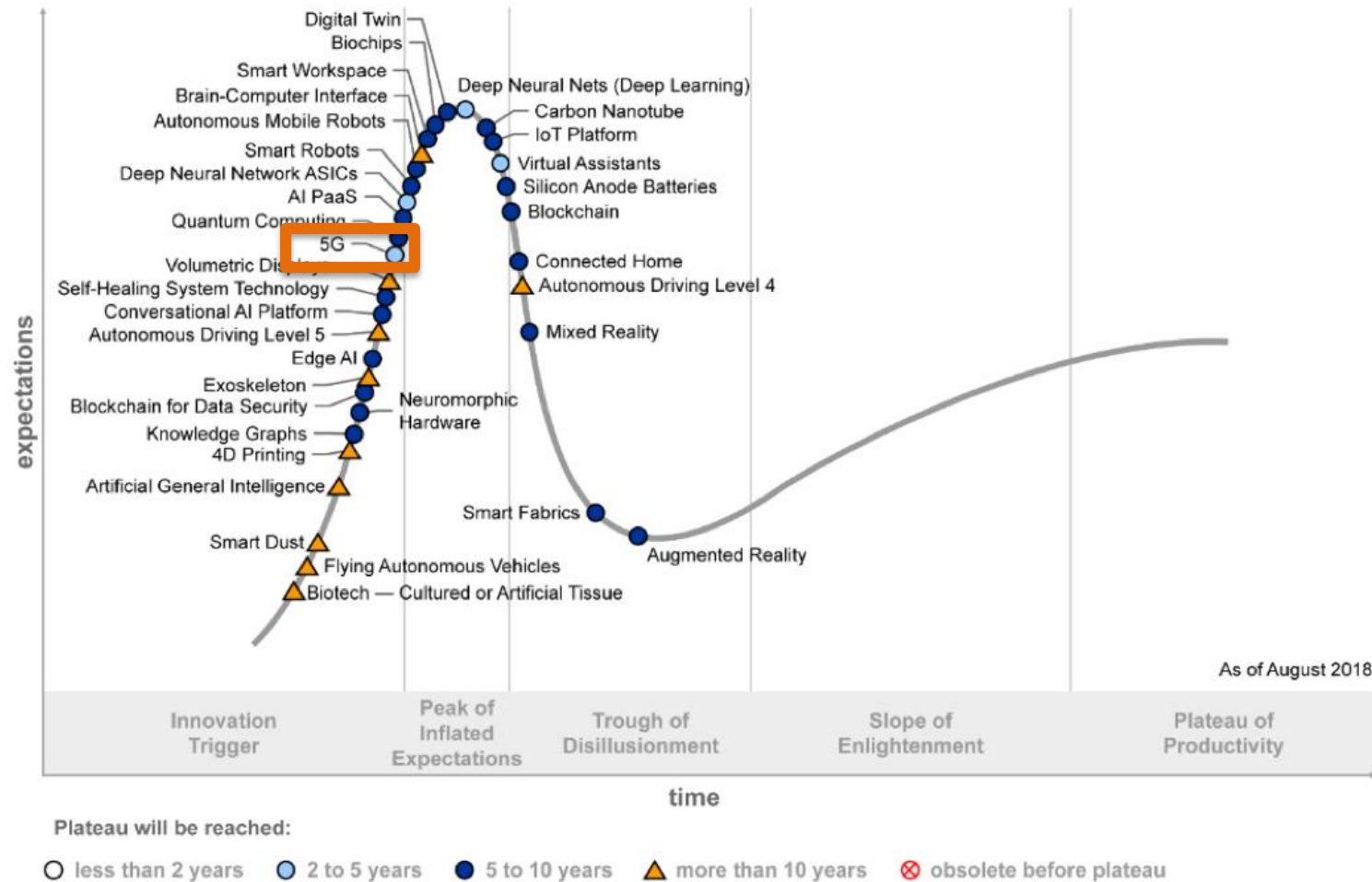
FTTH Conference 2019, Amsterdam



Fibre to the Home
Council Europe

www.ftthcouncil.eu

5G is a Hype



As of August 2018

5G ≠ 4G



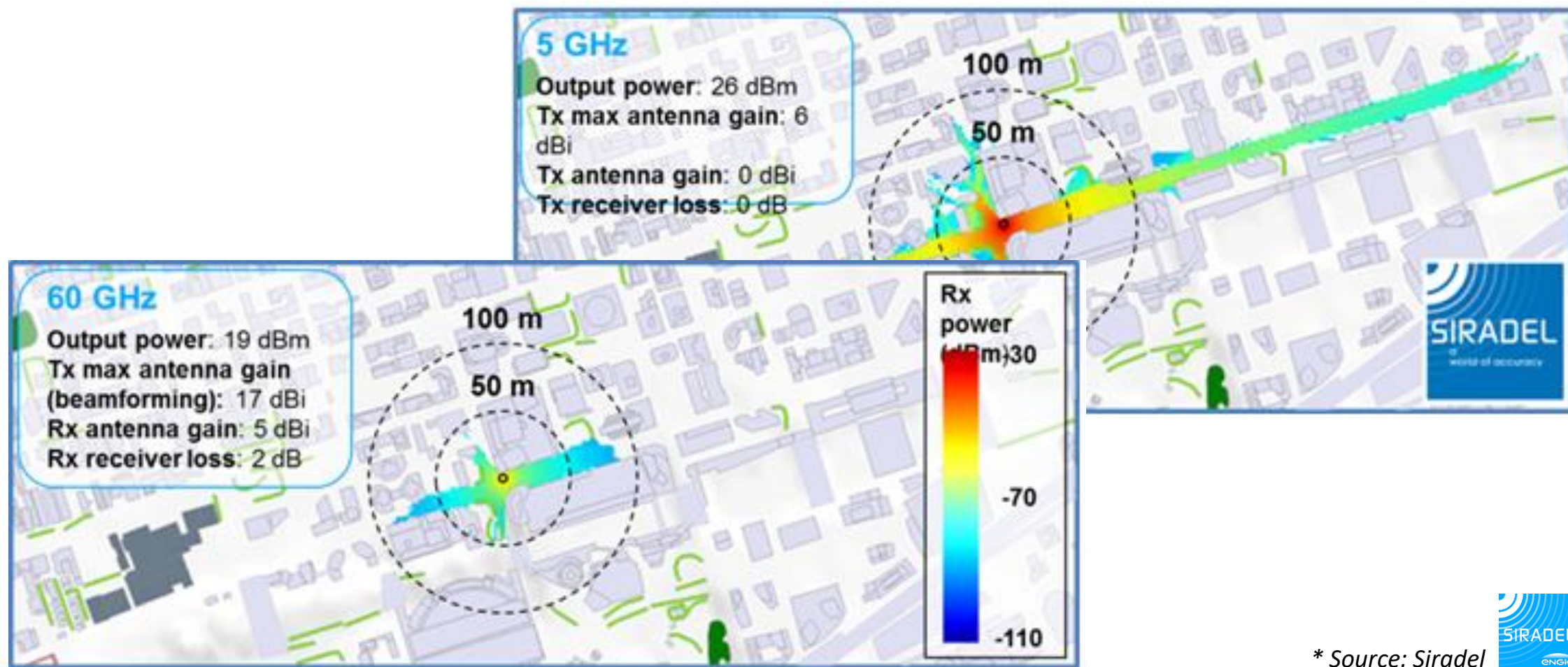
* Source: Qualcomm

Current Study:
Sub-6Ghz (3,5Ghz)
Mmwave (26Ghz)

Future Networks:
60Ghz?
6G? 10G?



Impact of frequency on coverage



* Source: Siradel

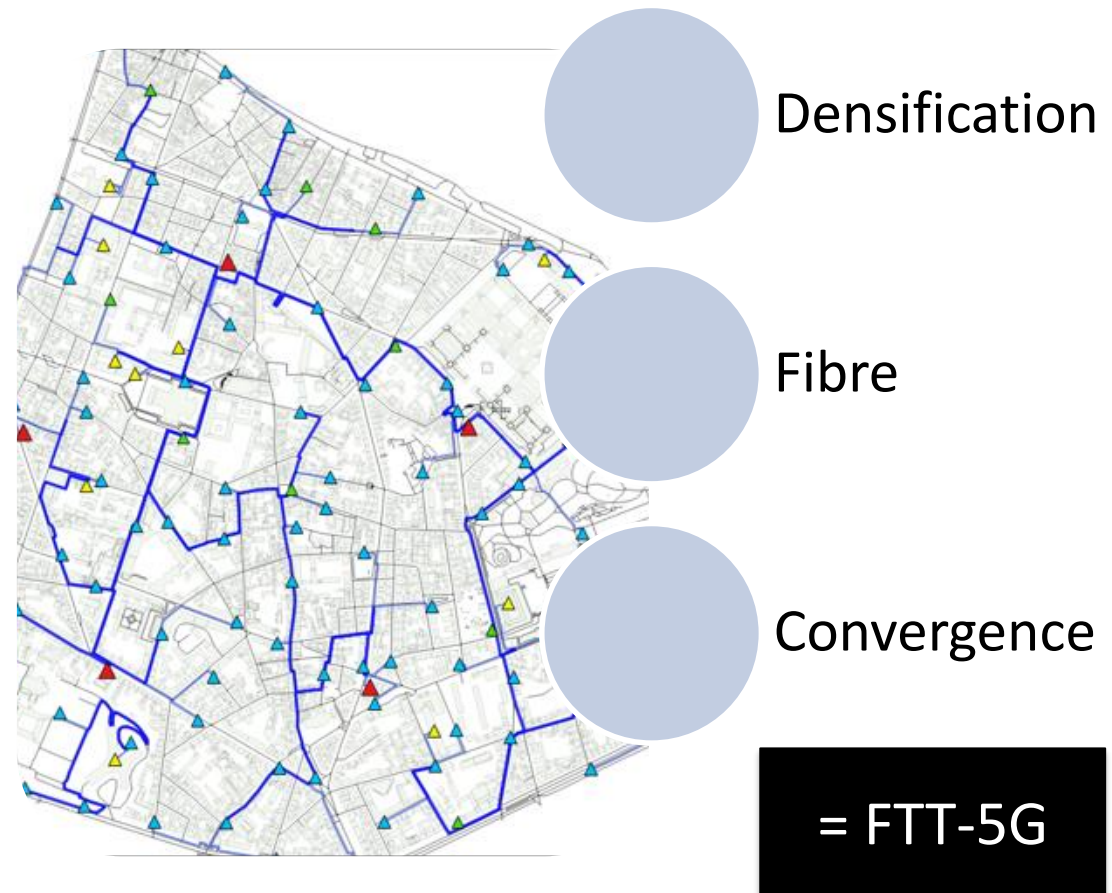
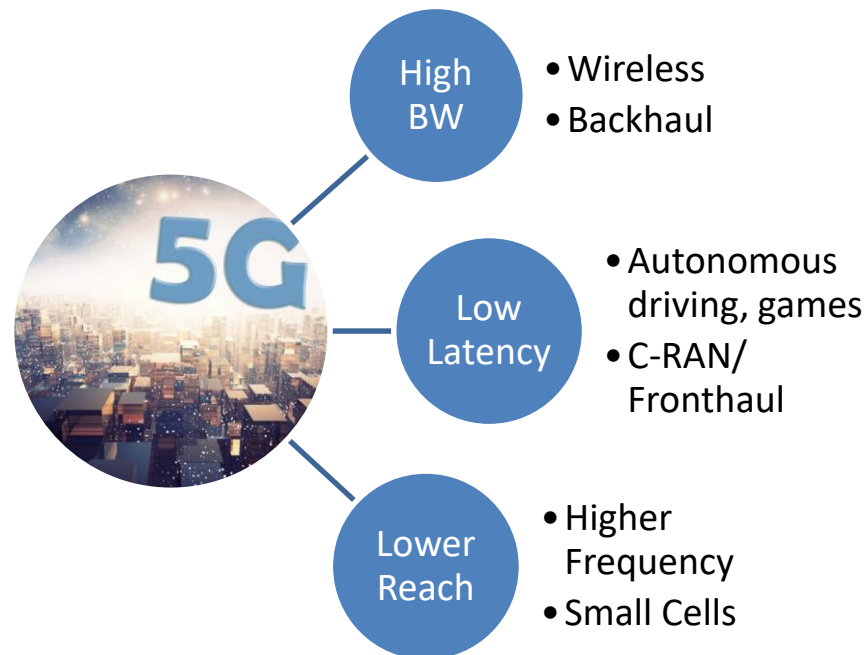


Fibre to the Home
Council **Europe**

www.ftthcouncil.eu

5G and Fibre

A game changer, where wireless can no longer exist without wireline



Objectives of our FCGA Study

Convergence
Between
Fibre for 5G
and FTTH

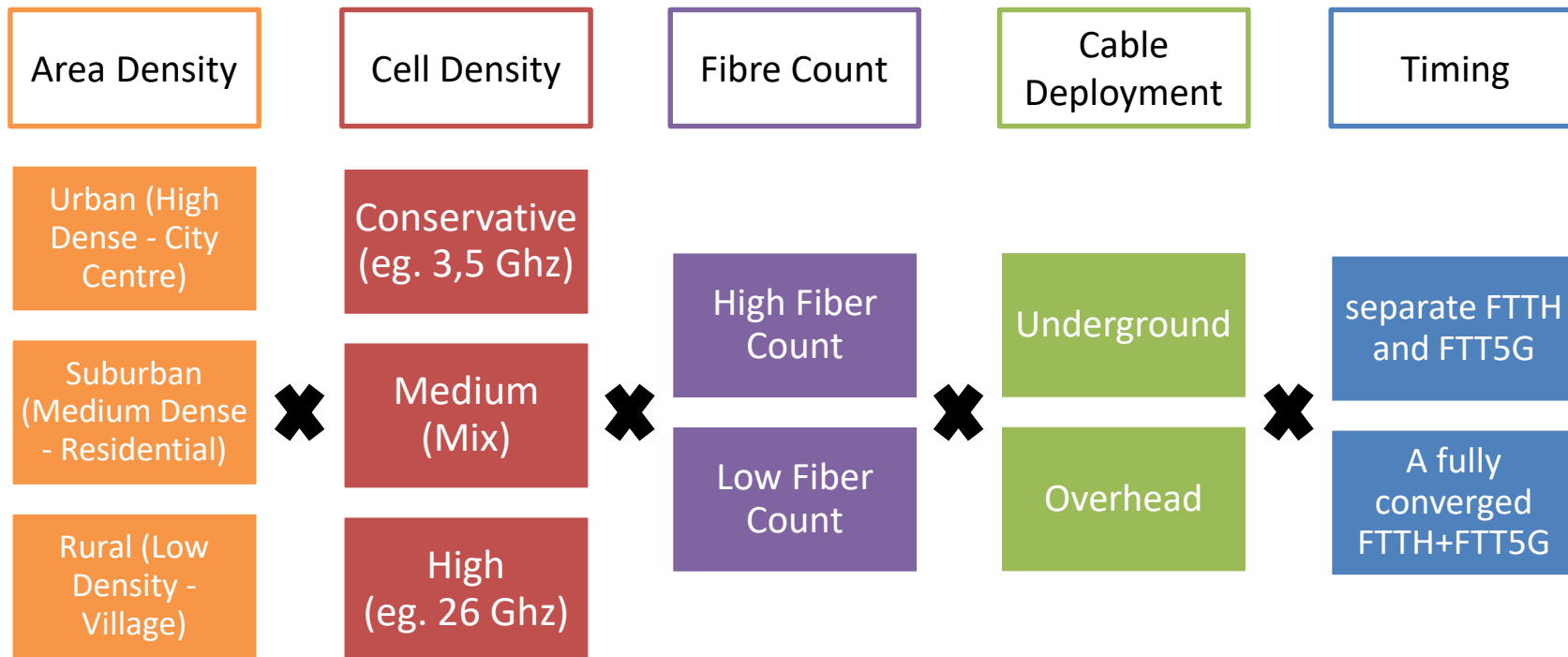
Range of Savings

Urban vs Rural

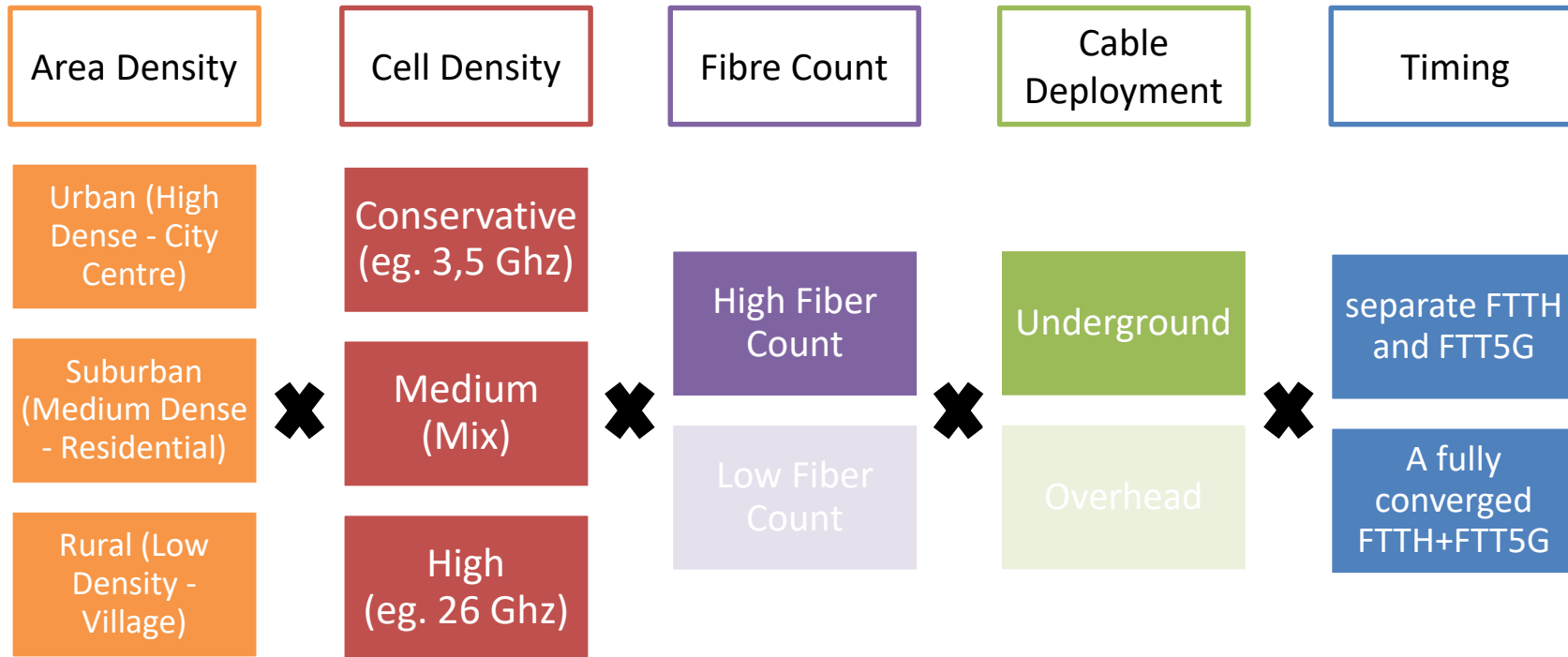
Impact of Assumptions

Timing aspects

36 Scenarios



Today: focus on 9 scenarios



3 Areas

Urban



High Dense

- 4k Buildings
- 30k Homes
- 24k inh/km²
- Lots of “Visitors”

Suburban



Medium Dense

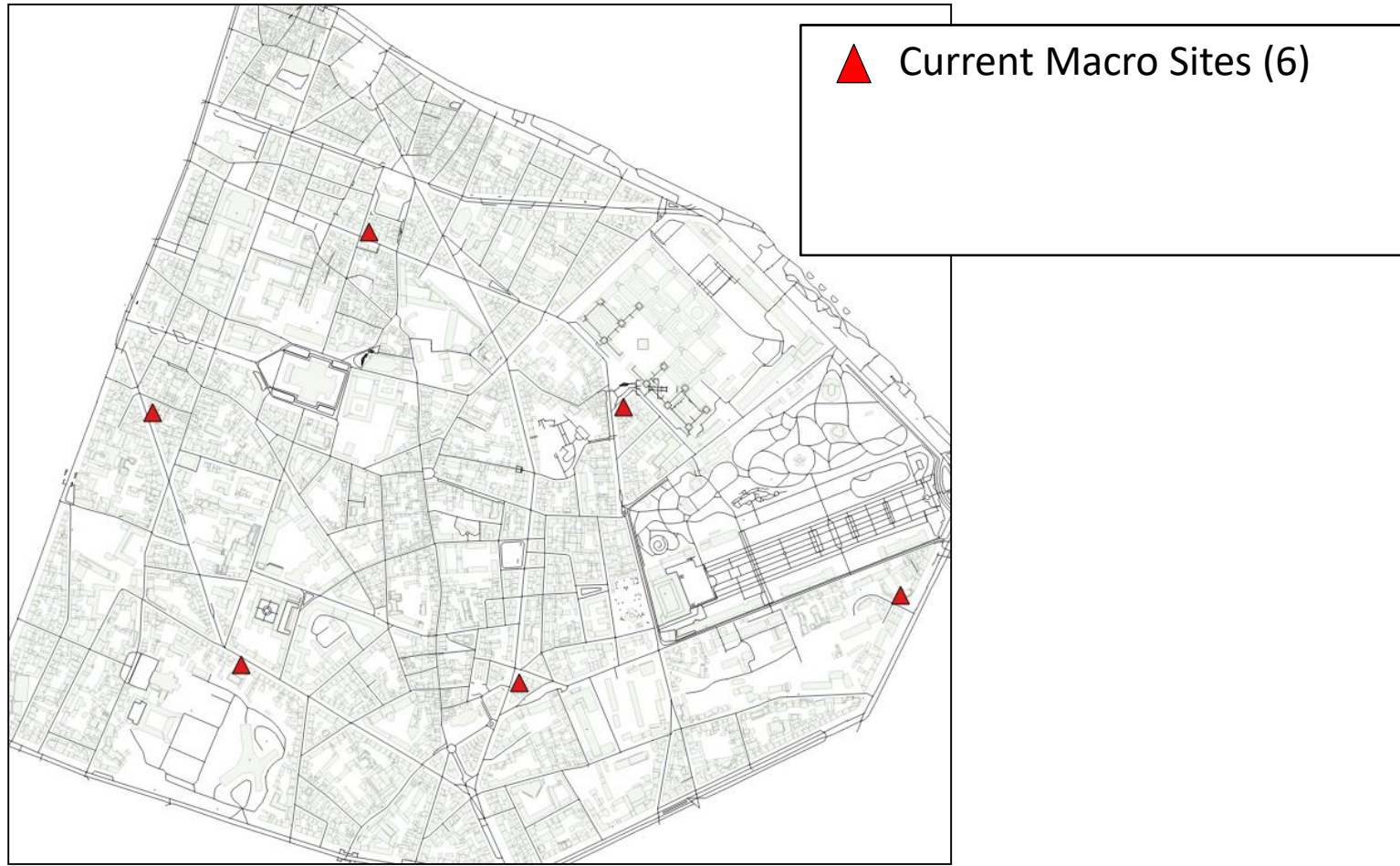
- 5,7k Buildings
- 5,7k Homes
- 3,5k inh/km²



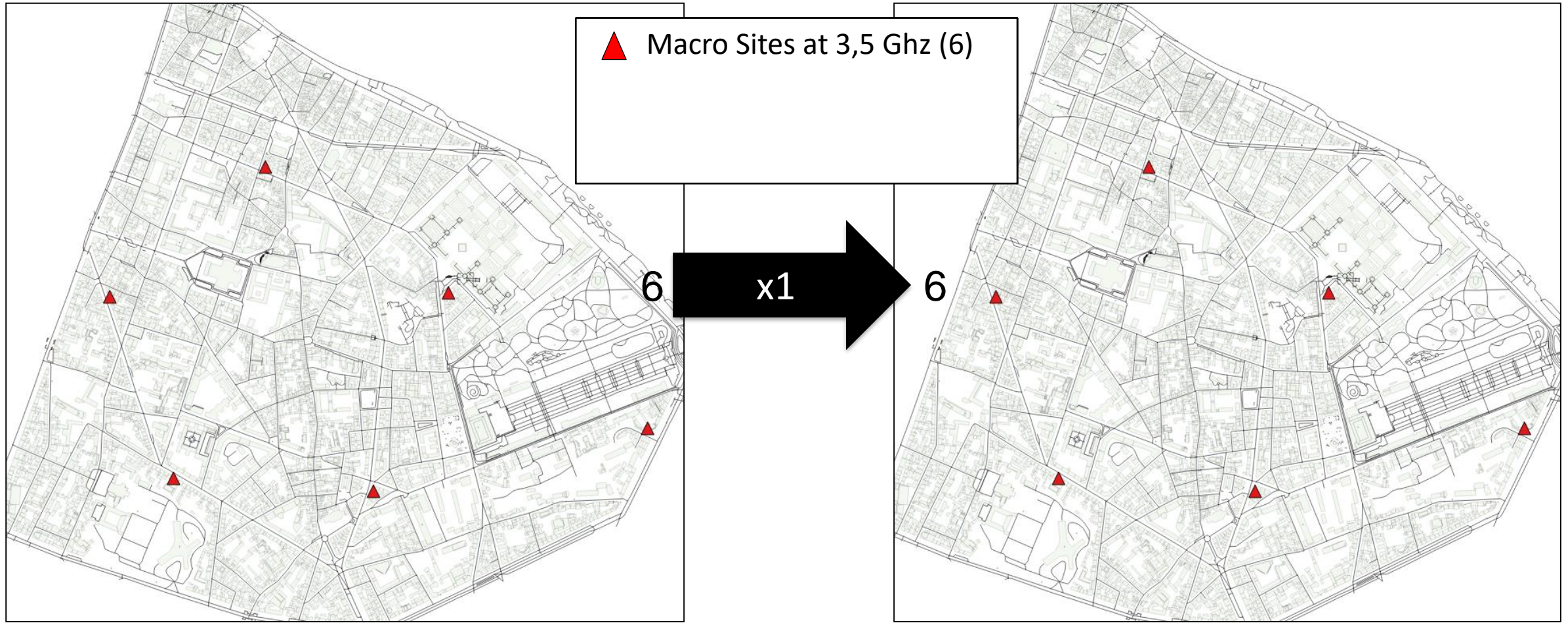
Low Dense

- 7,1k Buildings
- 7,1k Homes
- 95 inhabitants/km²

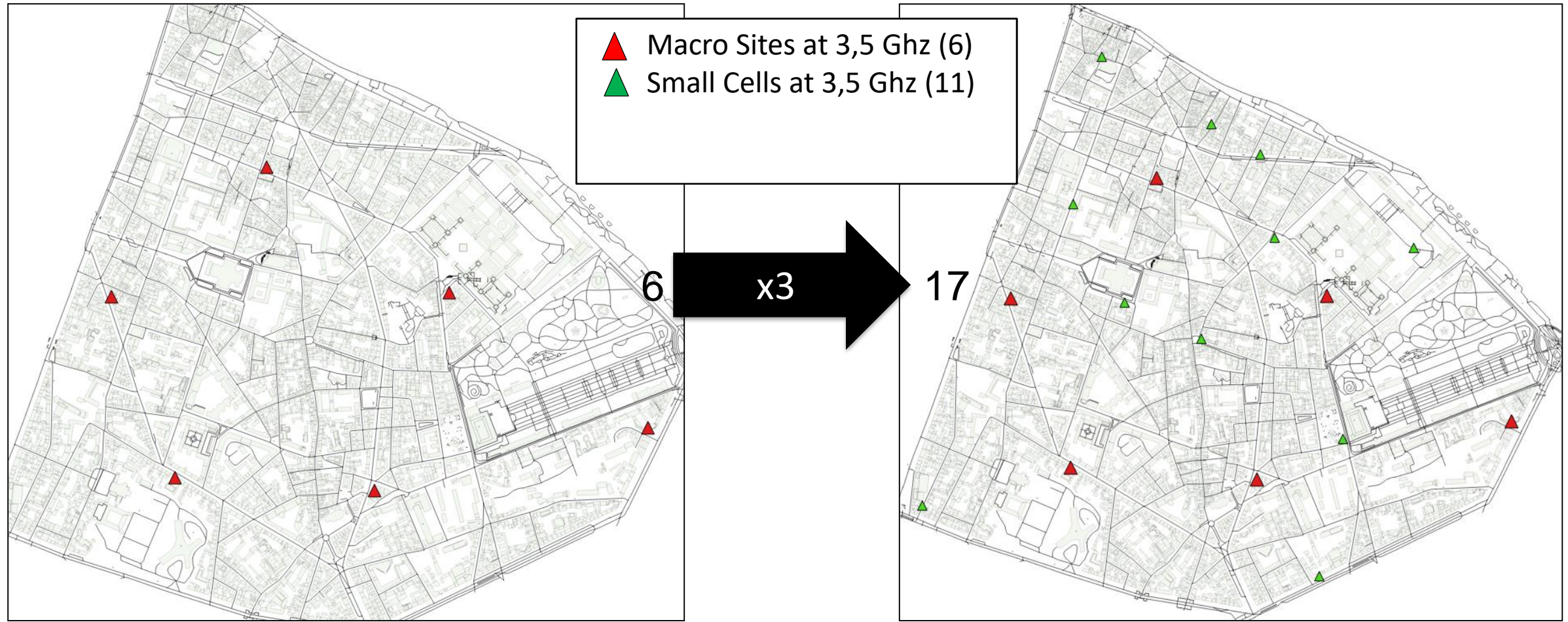
Cell Density – Example on City Centre



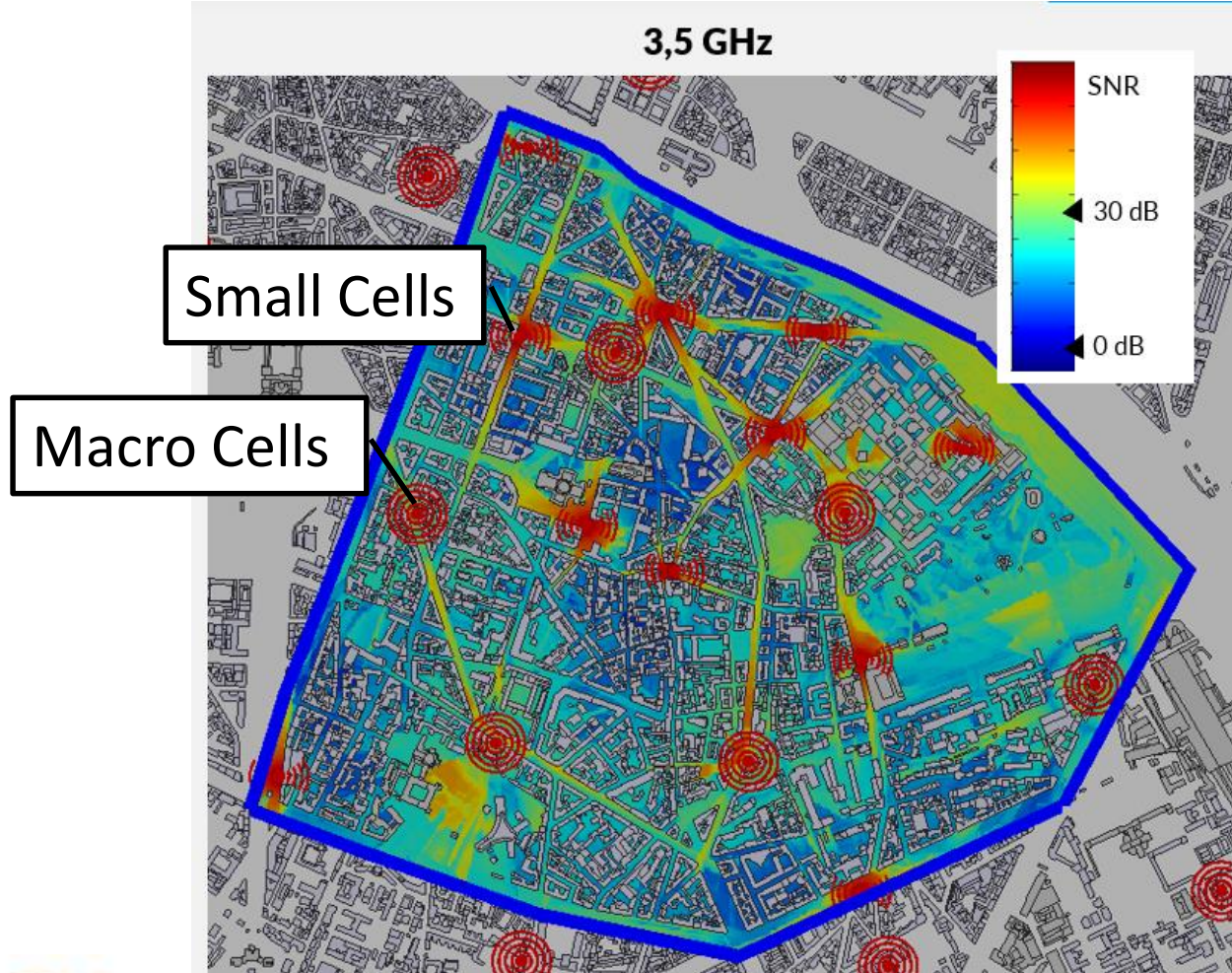
Cell Density – Stage 1: 5G from Macro Sites (3,5 Ghz)



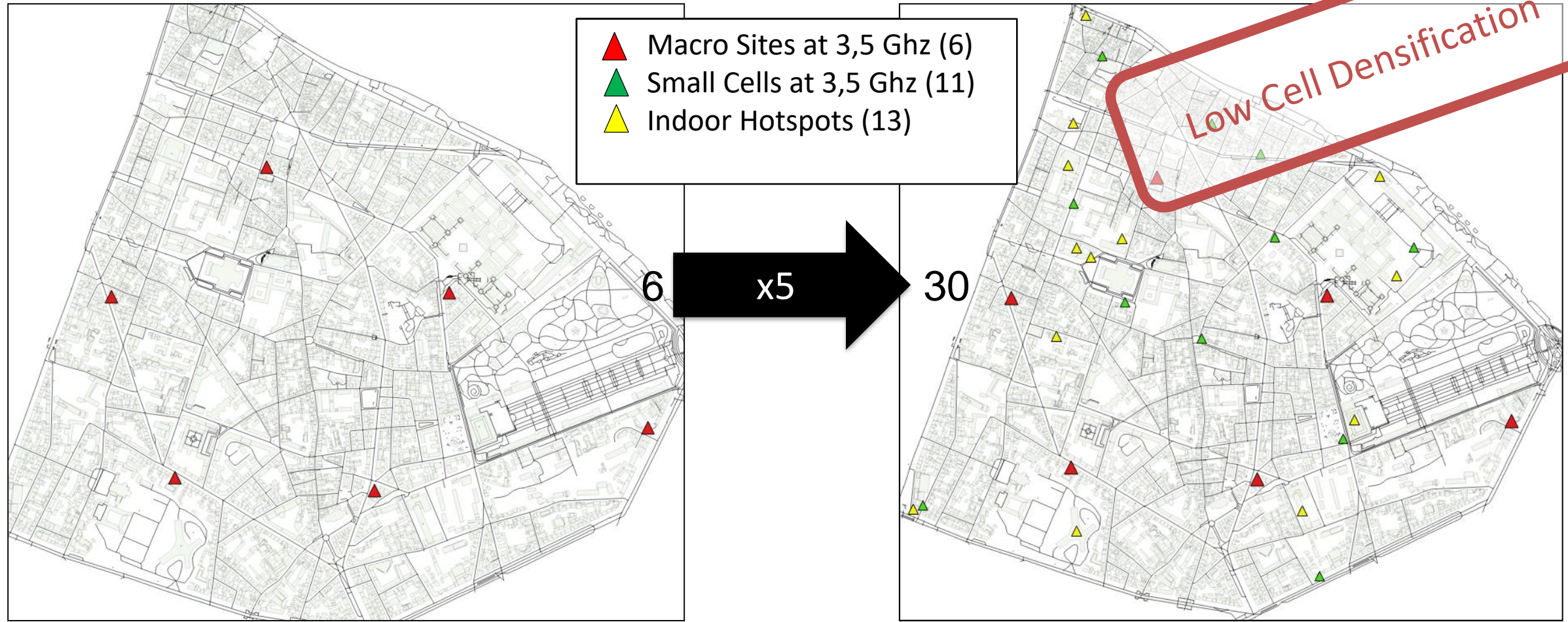
Cell Density – Stage 2: 5G Small Cells (3,5 Ghz)



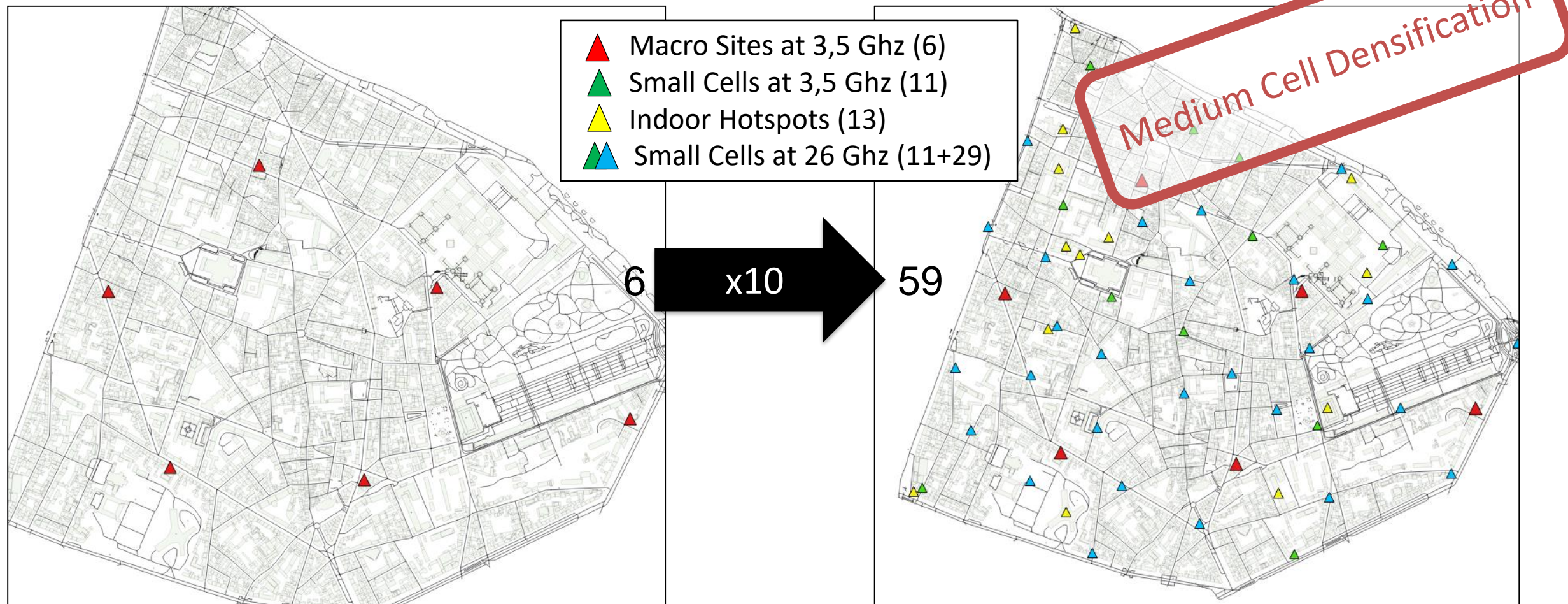
Cell Density



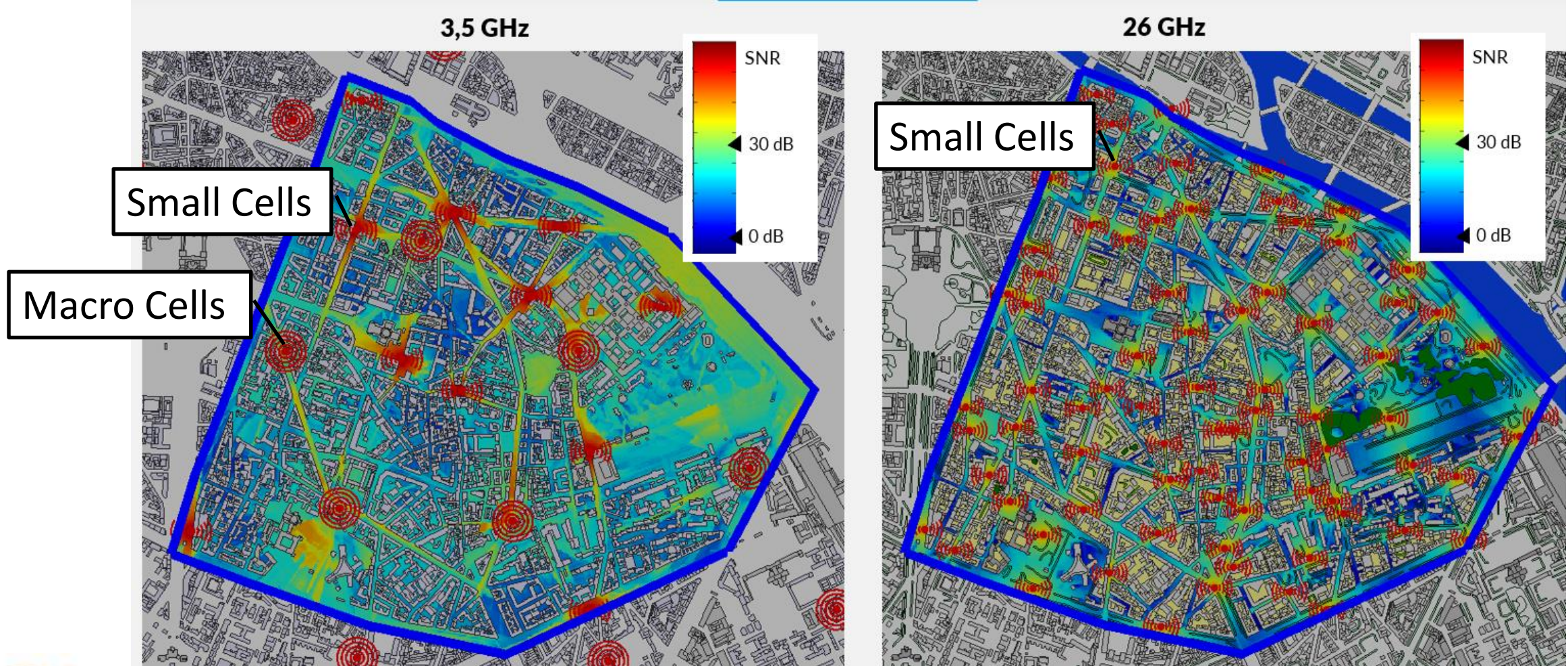
Cell Density – Stage 3: 5G Hotspots (26Ghz)



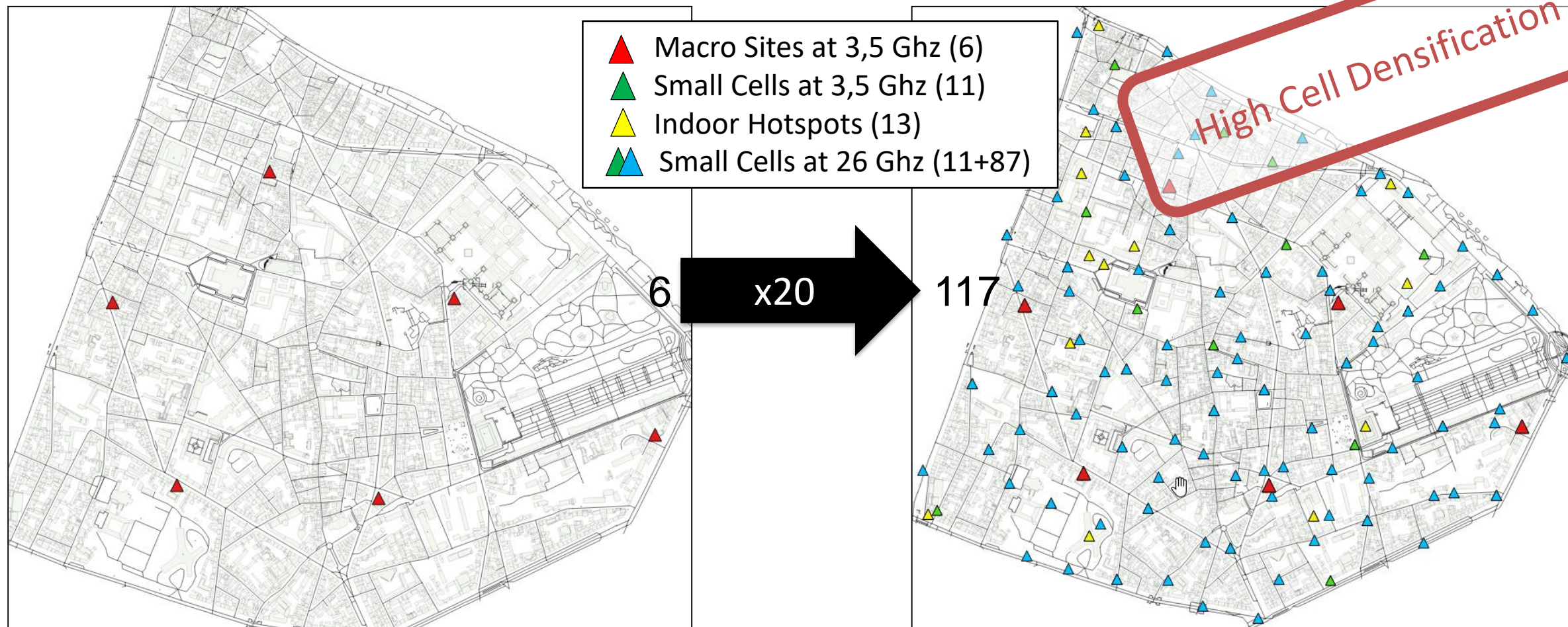
Cell Density – Stage 4: 5G Small Cells (26Ghz – 50% coverage)



Cell Density – Stage 5: 5G Small Cells (26Ghz – 95% coverage)

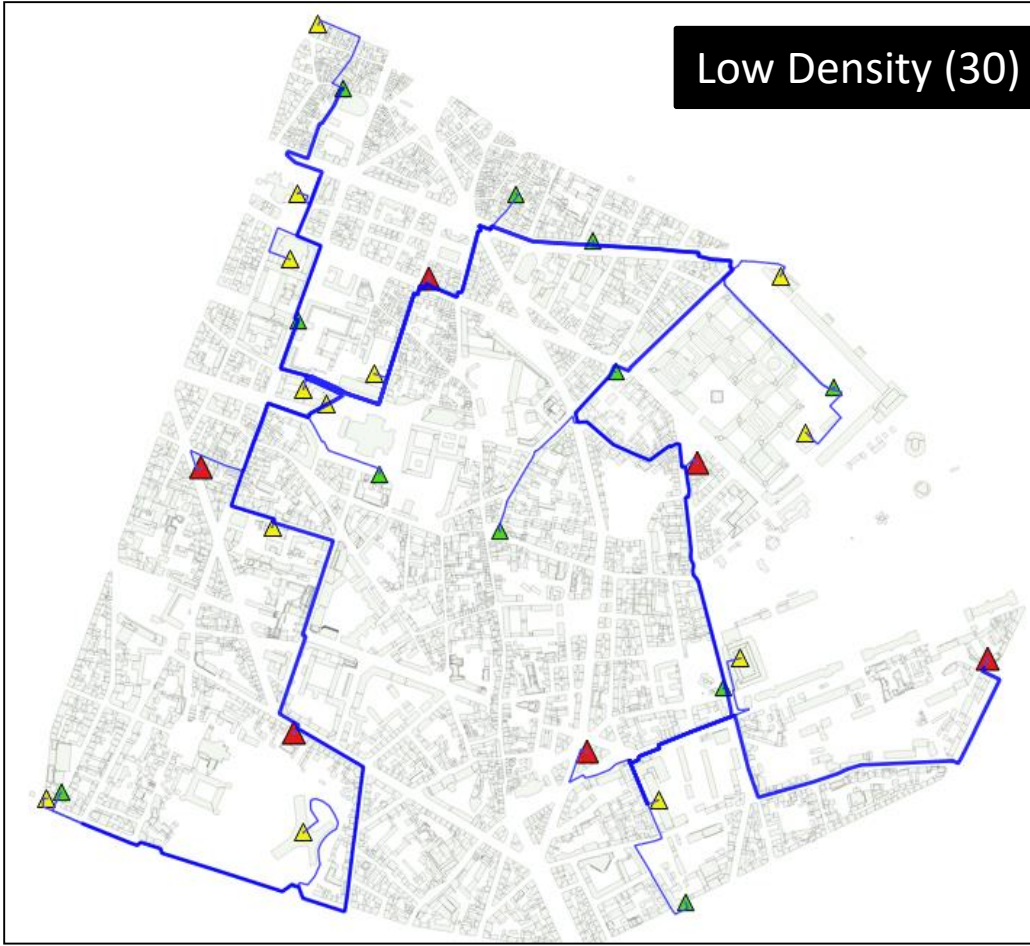


Cell Density – Stage 5: 5G Small Cells (26Ghz – 95% coverage)

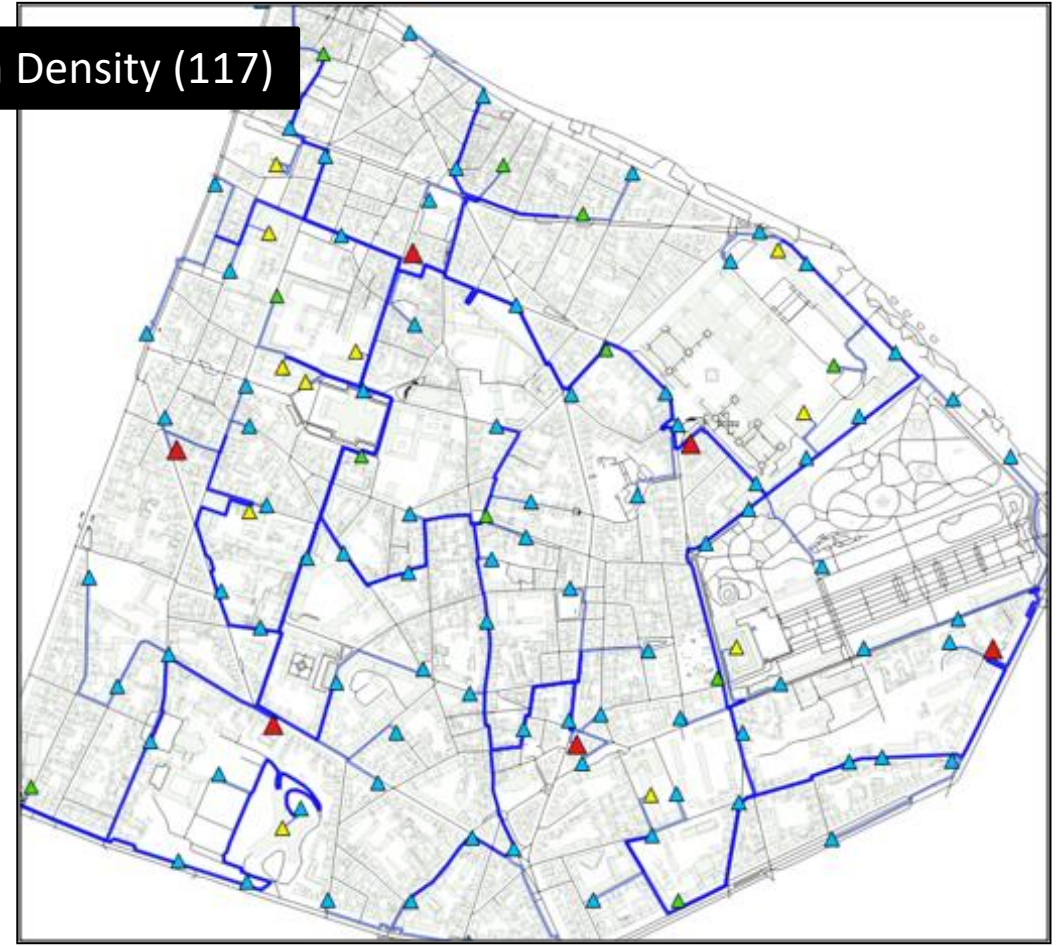


Cell Density – FTT-5G

Low Density (30)

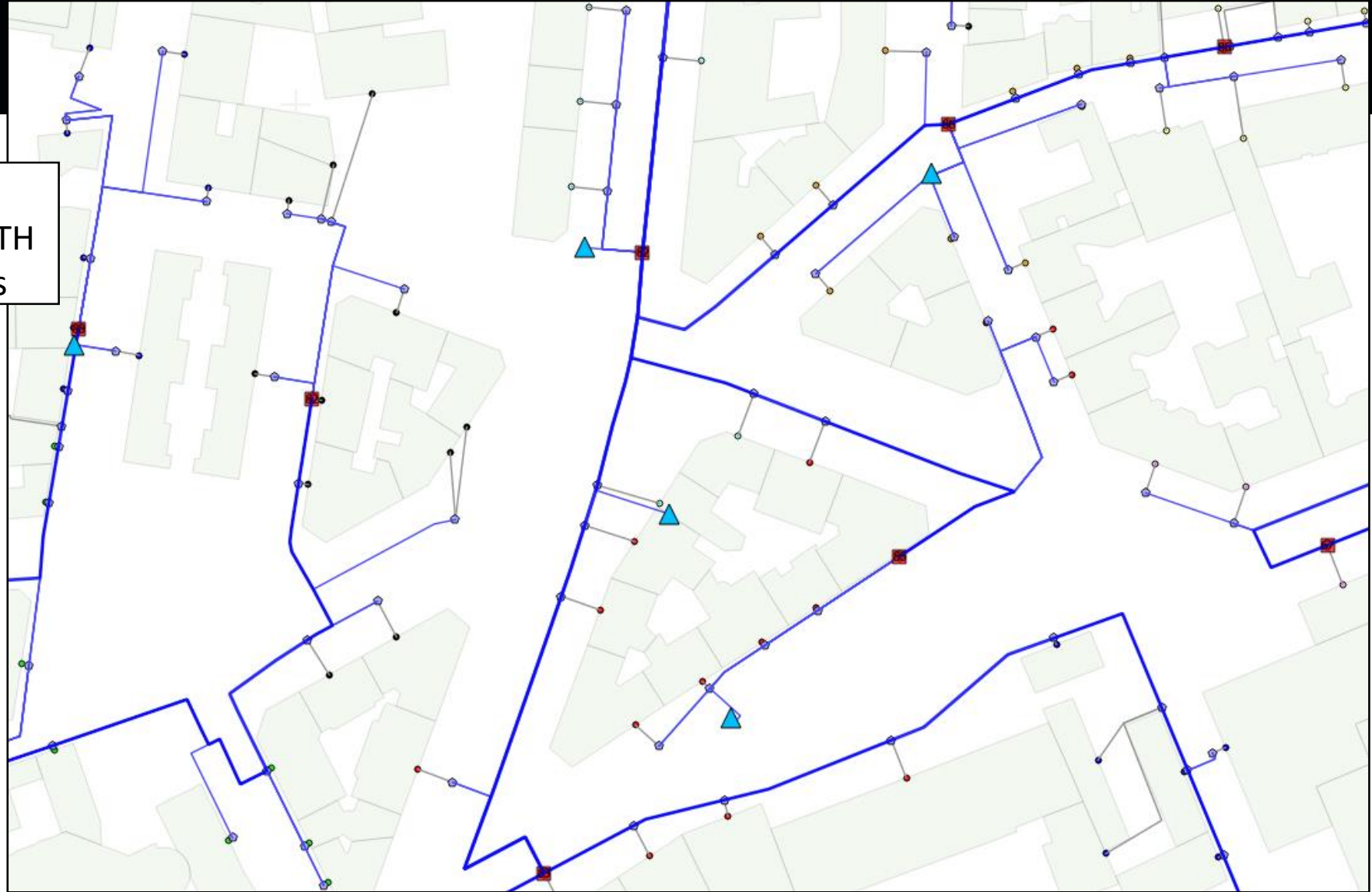


High Density (117)



Convergence

- Fiber cable
- Homes on FTTH
- ▲ 5G Small Cells



Source: Comsof (Comsof Fiber)

Costs

INCLUDED

- OSP Fiber Network
 - Trenching
 - Ducts
 - Cables
 - Closures
 - Poles
- ISP Central Office
 - ODF
 - Racks

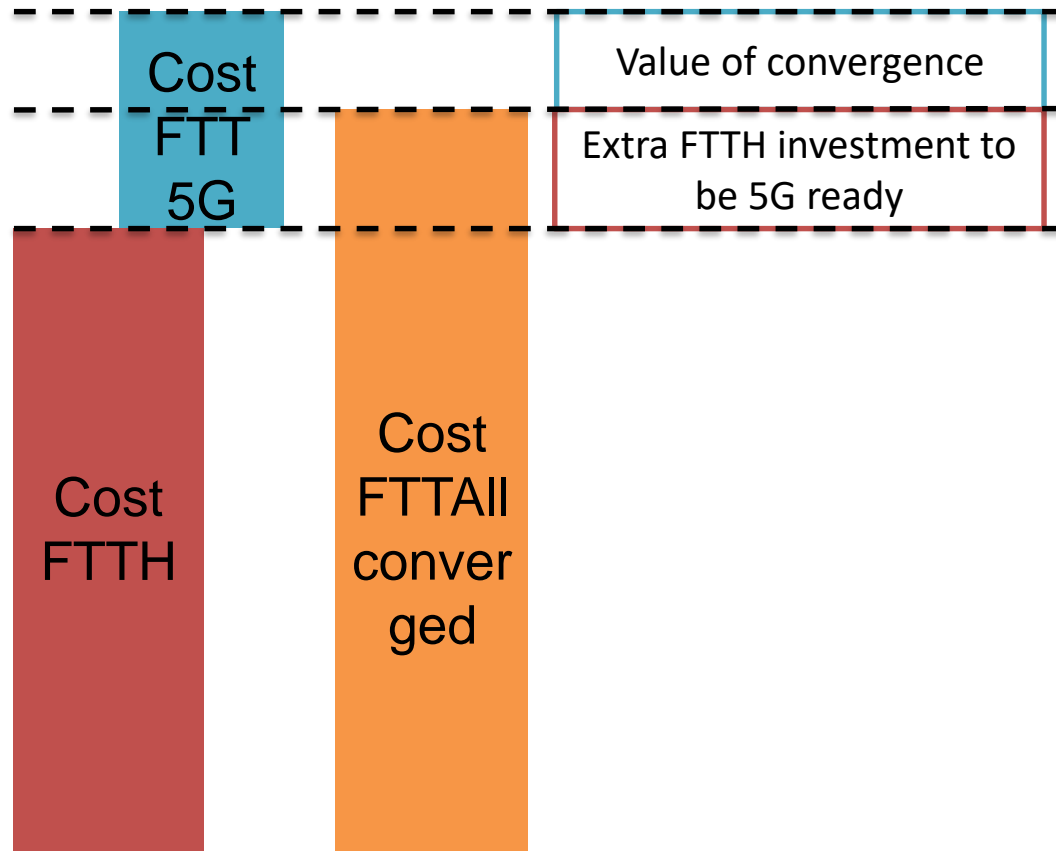
EXCLUDED

- Fiber Active Equipment
- 5G Active Equipment
- 5G Site Acquisition
- 5G Spectrum

RESULTS



Example result (conceptual)

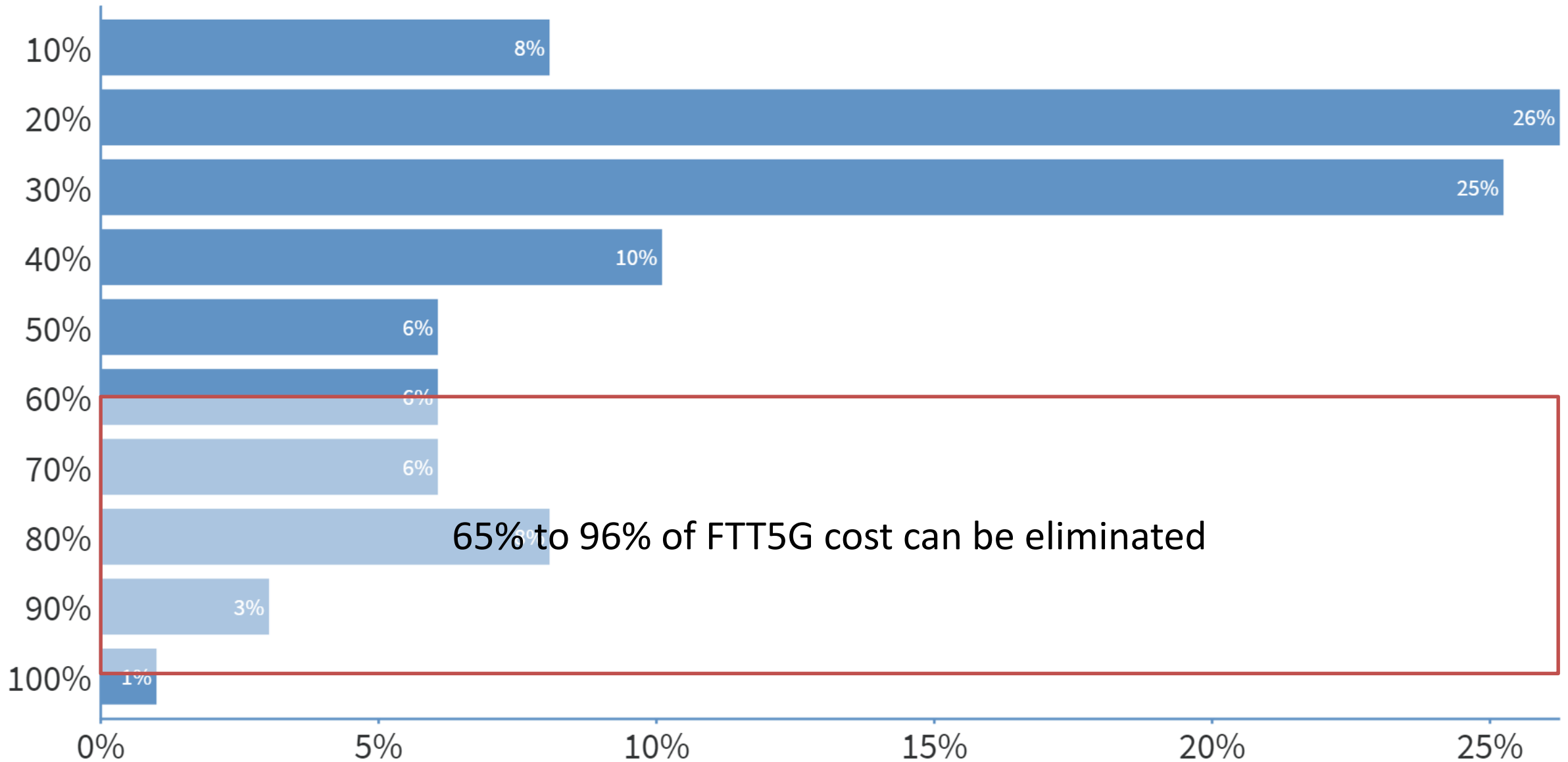


$$\frac{\text{Value of convergence}}{\text{Cost FTT5G}} = \text{Percentage of the FTT5G cost that could be saved through convergence}$$

$$\frac{\text{Extra FTTH investment to be 5G ready}}{\text{Cost FTTH}} = \text{Extra Investment on top of FTTH to make it 5G ready}$$

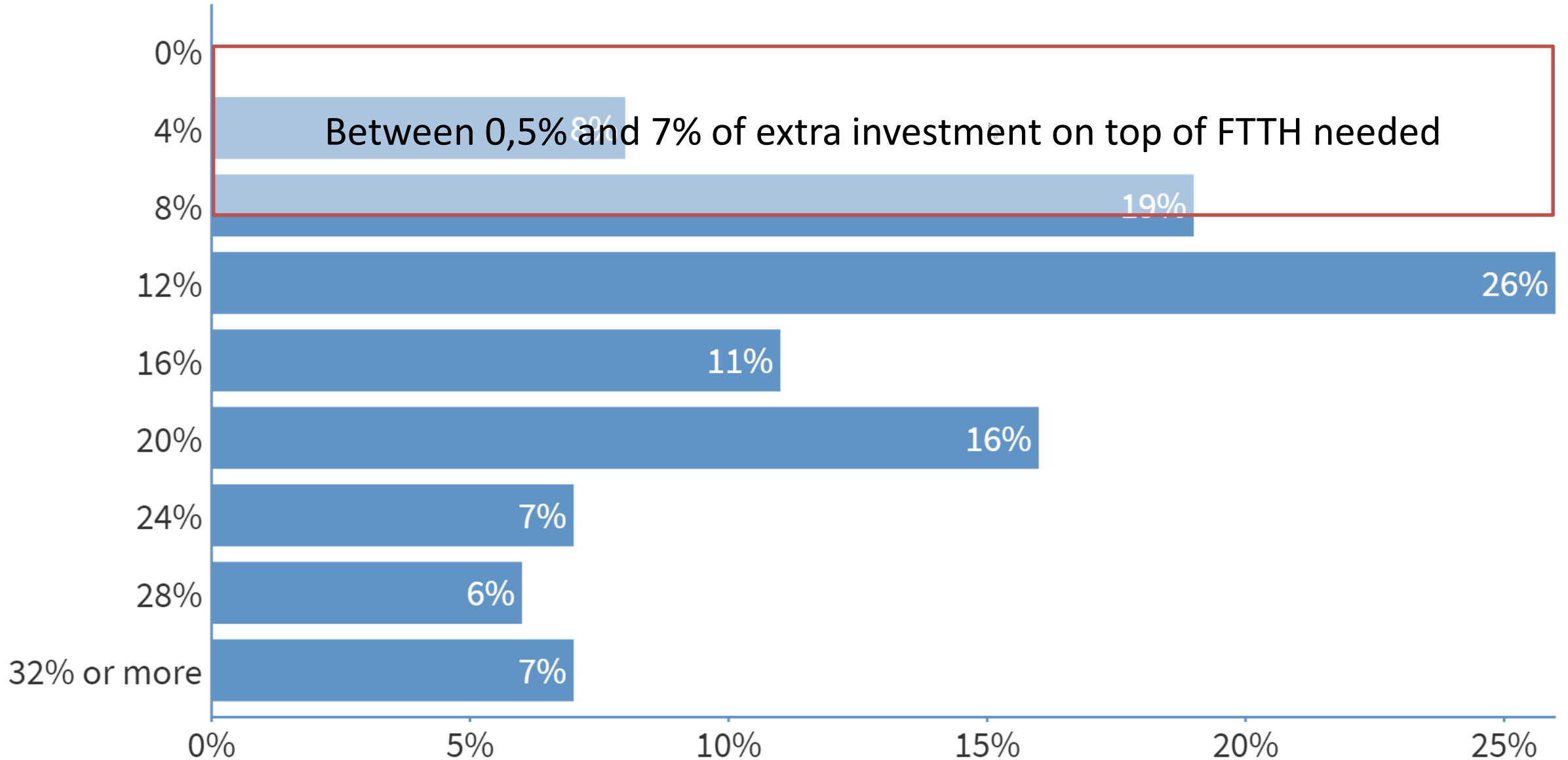
% of FTT5G network cost that can be saved through convergence?

Respond at PollEv.com/ftth19



% extra investment on FTTH for 5G-ready?

i Poll is full and no longer accepting responses



Results

| | High Dense Cells | Medium Dense Cells | Low Dense Cells |
|-------------------|------------------|--------------------|-----------------|
| High Dense Area | 74% -- 5,6% | 75% -- 3,8% | 96% -- 0,4% |
| Medium Dense Area | 75% -- 7,2% | 83% -- 3,2% | 93% -- 0,8% |
| Low Dense Area | 65% -- 6,6% | 81% -- 2,7% | 85% -- 1,9% |

% of FTT5G saved by convergence -- % of extra investment to make FTTH 5G-ready

**Between 65% and 96%
of Fibre costs for 5G xHaul
can be eliminated
by rolling out an optimised
and future proof
converged fibre network**

**In some cases the cost for fibre to 5G
can be virtually eliminated**

**which can potentially decrease the total
cost of 5G by order of 50%**

**The extra investment needed to
immediately make an FTTH network ready
for 5G (even for high density of cells)
is only 1% to 7%**

A risk worth taking?

Thank you!

Questions?

This study was realized with valuable contributions from all FTTH Council organisations worldwide.

Specials thanks to the core group including

Erzsebet Fitori, Joël Mau, Tony Shortall, Comsof (Raf Meersman, Kevin Wynne, Jonas Verstuyft),
Commscope (Vincent Garnier, Pedro Torres), Corning (Mike Knott, Vanesa Diaz), Rala (Tobias Ahl, Karin Ahl),
Open Fiber (Luigi Gambardella, Edoardo Fagiolini)

Special thanks to Siradel and Prof I. Tomkos (AIT)
for their valuable contribution on 5G assumptions and technologies.

Thank you for your attention!
Stay tuned for more details about the study via
www.ftthcouncil.eu

