

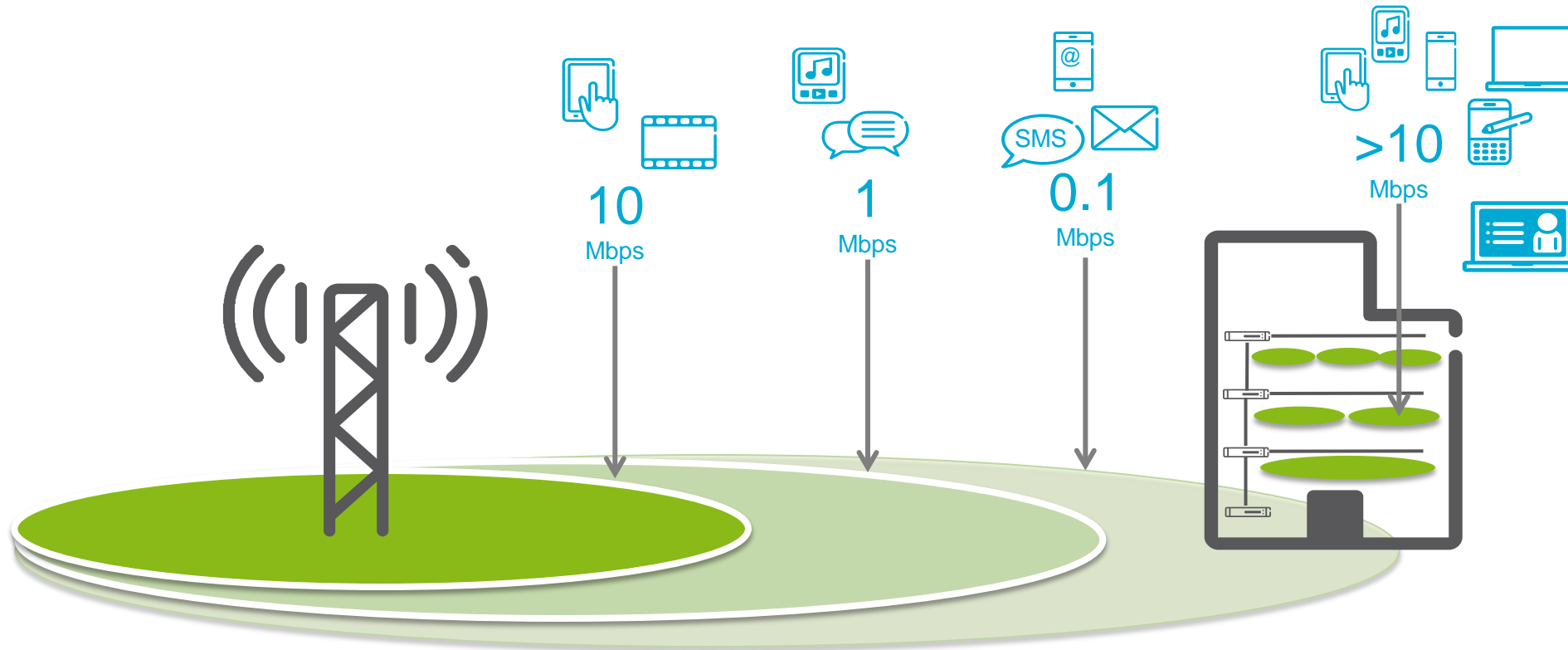


ERICSSON

# HETEROGENEOUS NETWORKS PRODUCTS AND POSSIBILITIES

MARTIN LJUNGBERG

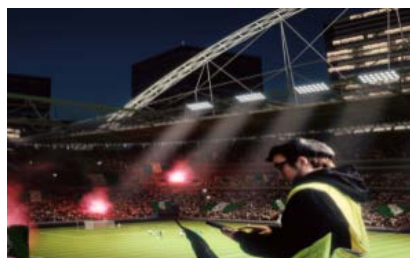
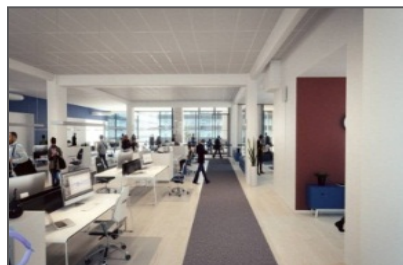
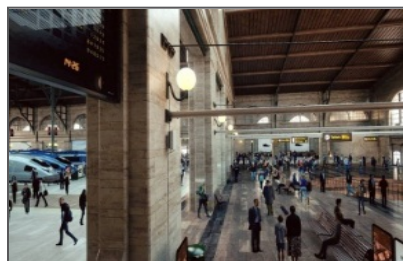
# APPLICATION COVERAGE



Performance relevant to the end user  
everywhere



# HOW TO USE THE OPTIONS



?



Radio DOT system



Pico RBS



Micro RRU



Micro RBS



DAS

# TAILORED SMALL CELL SOLUTIONS



City street/square



Café/shop



Train station /mall/airport



Stadium



Office

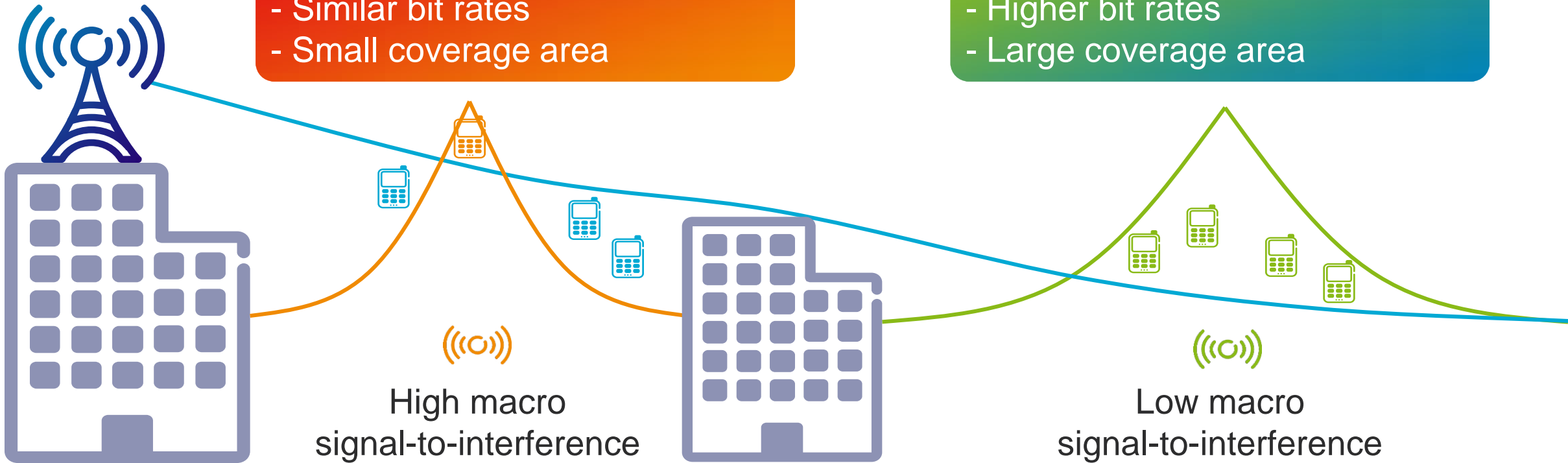
# SMALL CELLS LOCATION RELEVANCE

## Small added value:

- Low offload per user
- Similar bit rates
- Small coverage area

## High added value:

- High offload per user
- Higher bit rates
- Large coverage area

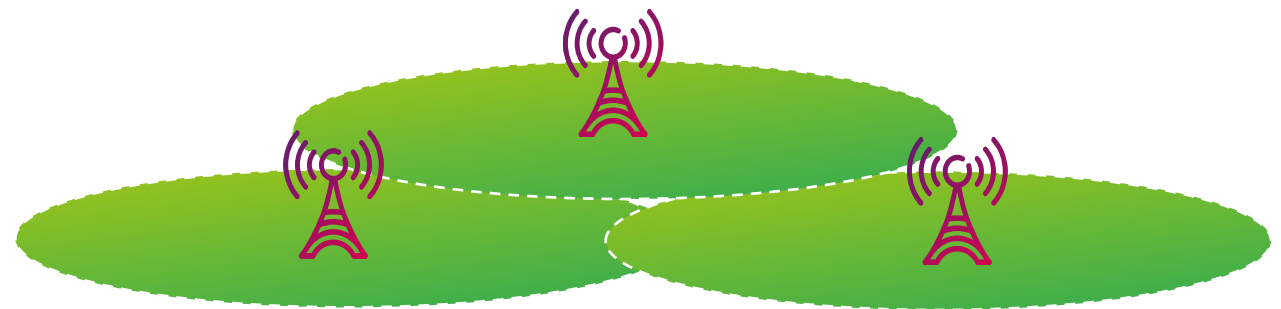


# WHAT IS INTEGRATED SMALL CELLS?

- › Service and Feature parity with macro network
- › Coordination with Macro
- › Seamless user experience
- › Full OAM and SON
- › Leverage Device IOT testing

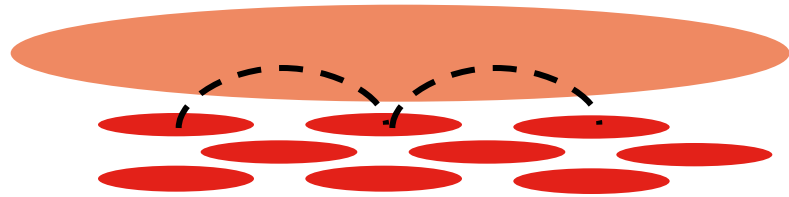


HD Voice, VoLTE  
and eMBMS



OAM and SON

# DOUBLE CAPACITY WITH SMALL CELLS ≡



9

## Uncoordinated small cells

Split spectrum, no carrier aggregation  
No or limited mobility, increased churn  
Multi-vendor integration

5

## Coordinated small cells

Reuse spectrum, carrier aggregation  
Seamless mobility & interference control  
Easy SW upgrade

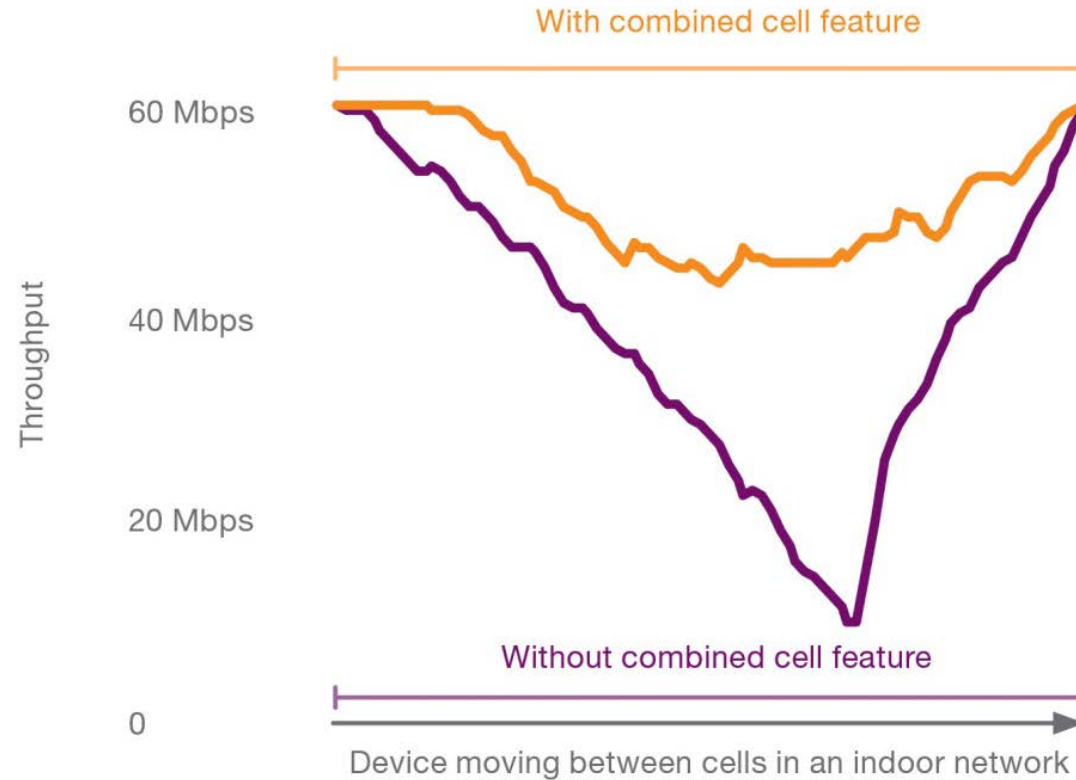
3

## Tightly coordinated small cells

Coordinated multi-point tx / rx  
Handover-less mobility  
Common scheduler, fast interference control

50% - 70% LOWER TCO WITH TIGHT COORDINATION

# COMBINED CELL



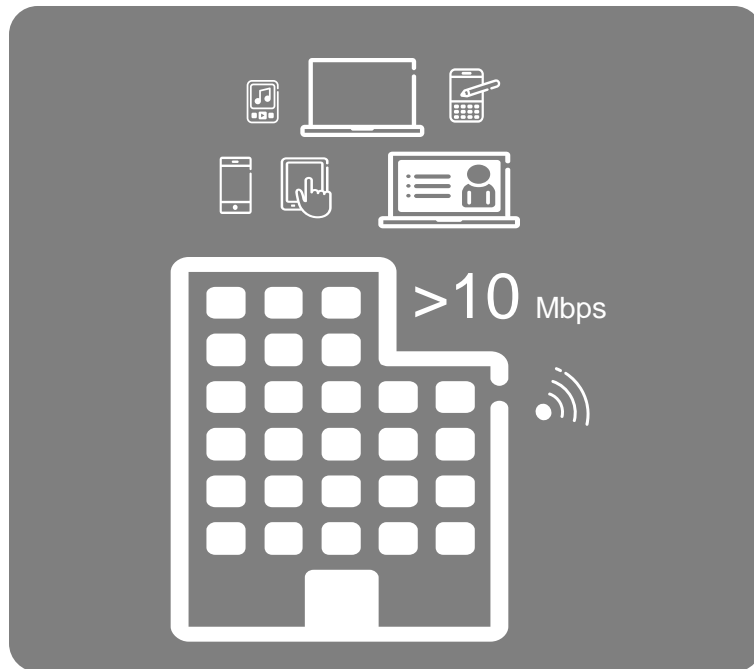
## COMBINED CELL IMPROVES MOBILITY



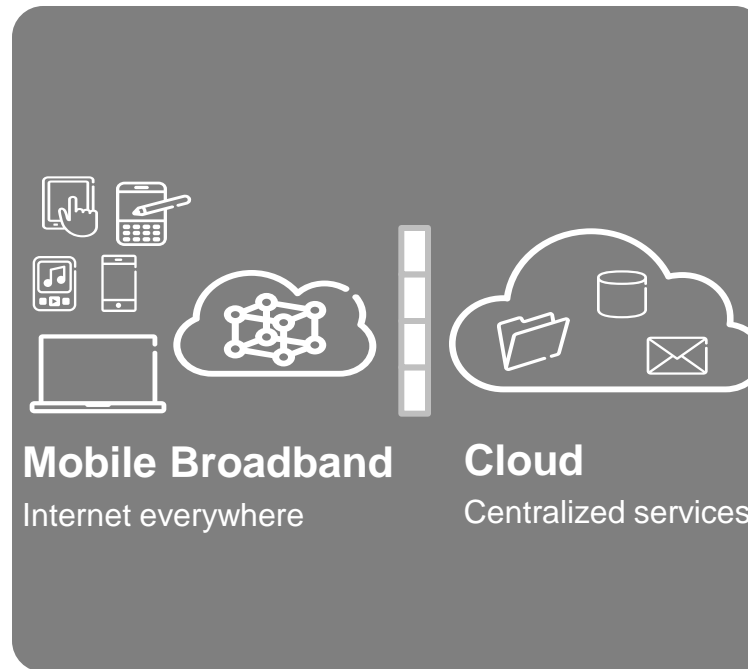
# THE INDOOR OPPORTUNITY



Indoor performance for  
exceptional App coverage



Expand Mobile  
Enterprise business

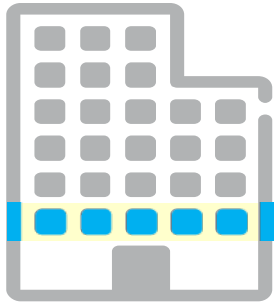


Address wide range  
of buildings sizes

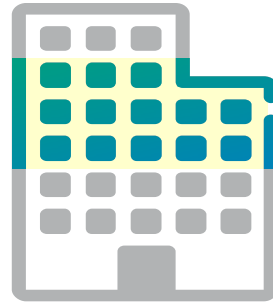


# INDOOR SMALL CELL VARIANTS

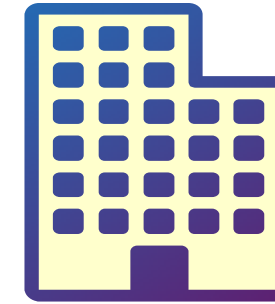
TARGET DEPLOYMENT BASED ON COVERAGE AREA



Small  
<5,000m<sup>2</sup>



Medium  
5,000–10,000m<sup>2</sup>



Large  
>10,000m<sup>2</sup>

*Fast deployment*



**Pico RBS**

**Radio Dot**



*Efficient indoor coverage*

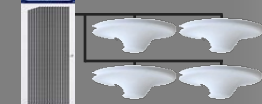
Pico  
DAS



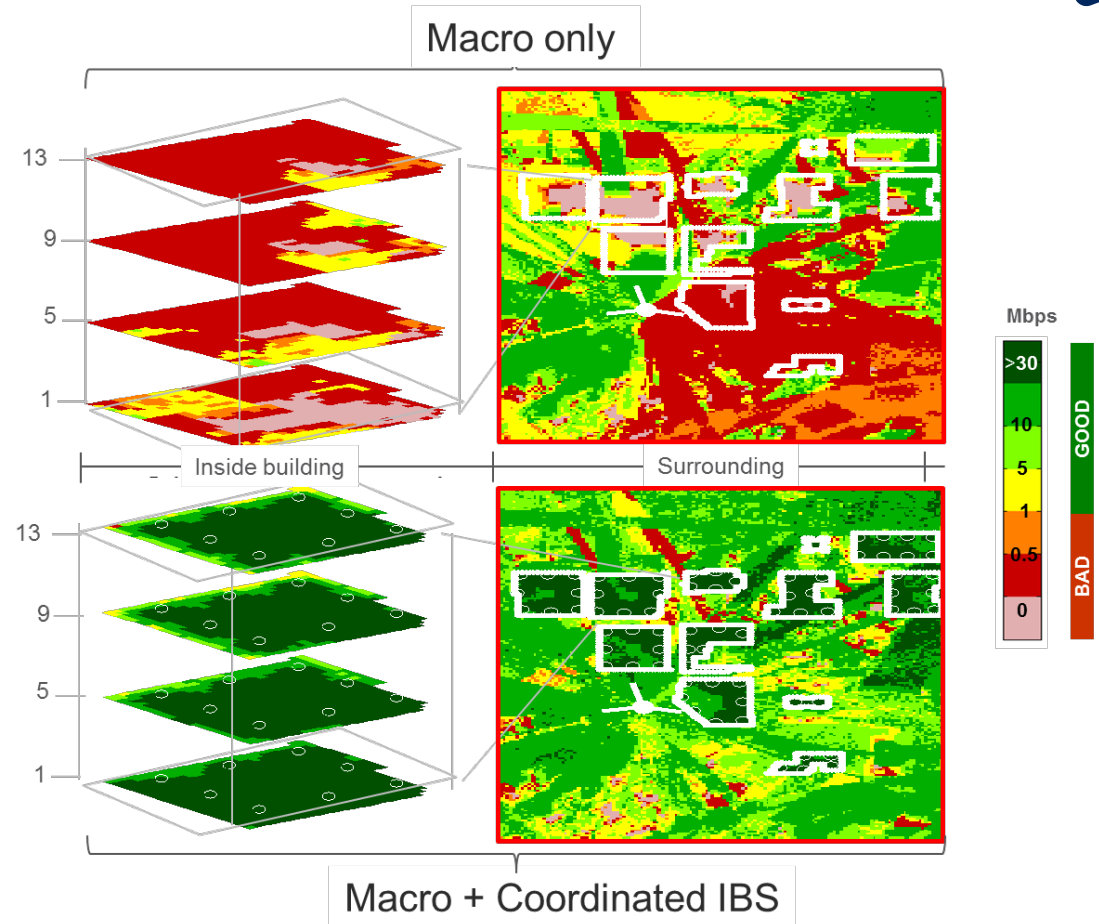
Micro  
DAS



Macro  
DAS



# ADDRESS INDOOR AND OUTDOOR



INTRODUCTION OF SMALL CELLS IMPROVES OVERALL  
NETWORK EXPERIENCE NOT JUST INDOORS

# INDOOR RADIO APPLICATION COVERAGE NEEDS INNOVATION



## › Best performance indoor

- Superior radio performance
- WCDMA and LTE
- Addressing enterprise market
- Capacity scales as needed



>10 Mbps

## › Easy installation

- Non intrusive form factor
- LAN Cable
- Large range of building sizes



## › 100% network integrated

- Service and Feature parity with macro network
- Full OAM and SON



HD Voice, VoLTE  
and eMBMS

OAM and SON





INTEGRATED  
PERFORMANCE  
EVERYWHERE



**ERICSSON**