



2023  
EXPERT  
INSIGHT

# How AI will impact Mobile Communications



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## Background

Massive complexity in mobile networks

Beyond human capability

## What AI is used for in 5G networks

Traditional methods with Look-up Tables

Look-up tables don't cut it anymore

### Statistical Network KPI optimization

Radio resource tweaks

Traffic steering

### Energy Savings

Simple stuff like sleep modes

Energy savings in more complex networks

Issues with power cycling in radio hardware

### Intent-based optimization

Definition of intent

How to define intent

Intent applied to private networks

## What AI will be used for in future networks

### Telecom Operators

AI to optimize FWA and mobile simultaneously

Increased capacity using AI on beamsteering

Optimize for different apps

Service levels for different applications without using DPI

Monetizing the “premium” experience and using AI to make it work better

### Private 5G Networks

Optimizing for network parameters like latency or reliability

Optimizing for specific applications in real time

## Where the AI will be executed

AI in the BBU and DU on the radio site

AI in the CU and central data centers

Integration with semiconductor chips

## How much benefit is possible

Examples of benefit in 13 different networks

How much capacity benefit is expected

How much energy savings benefit is expected

## Conclusions

ROI for AI in the RAN

**Figure 1: Increasing Complexity of Mobile Networks**

**Figure 2: Time constants for various AI decisions**

**Figure 3: Illustration of how Intent translates human desires into AI instructions**

**Figure 4: Beamsteering coordination**

**Figure 5: Illustration where various AI tasks will be performed**