

An illustration of a person's head and hand in profile, pointing towards a complex circuit board diagram. The diagram features various lines, nodes, and a prominent orange path. The person is drawn with simple black outlines, and the circuit board is composed of grey and orange lines on a white background.

omnitele

Omnitele RAN Design Diagnostics

May 2020

30 year of experience



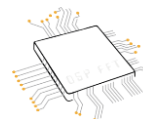
1 000+ projects in 100+ countries



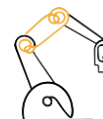
OPERATORS



REGULATORS



NETWORK VENDORS



NETWORK USERS

STRATEGY SUPPORT

RAN technology roadmap

5G strategy & vendor selection

Spectrum valuation

REVENUE ENHANCEMENT

ARPU-driven network design

Churn-driven network design

Public competition benchmarks

OPERATING EFFICIENCY

ROI-driven RAN investments

Outsourced RAN design service

RAN consolidation, 2G/3G sunset

CUSTOMER EXPERIENCE

QoE audit & monitoring

Capex-free QoE optimisation

QoE-driven RAN expansions

EXPERIENCED – TRUSTED – INDEPENDENT – BUSINESS BENEFITS DRIVEN – VALUED PARTNER



Omnitele RAN Design Diagnostics

FAST TRACK TO MAXIMAL RAN EFFICIENCY

Omnitele has combined deep *telecom expertise* with modern *data science*, and has since supported dozens of operators to reach the maximal efficiency in their radio networks

QUALITY



10-20% QUALITY
IMPROVEMENT
CAPEX FREE

COST SAVINGS



20-30% CAPEX
SAVING IN RAN
INVESTMENTS

STRATEGY



OPTIMISED &
FUTURE PROOF
LTE-5G STRATEGY

QUICK EXECUTION
FULLY REMOTELY

— BASED ON EXISTING
NETWORK DATA —

CONCRETE
ACTION PLAN



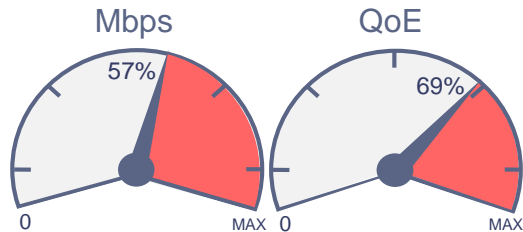
Omnitele RAN Design Diagnostics

QUANTIFIES THE FULL POTENTIAL OF RAN

CURRENT RAN GAPS

Diagnostics typically identifies **30-50% gap** to the maximum achievable performance due to RAN limitations

- Spectrum licenses are not in full use
- Site density is not always sufficient for the local traffic demand
- RF design is not fully optimised
- Advanced features and antenna solutions are not optimally deployed
- Parameters are not always configured for maximal performance

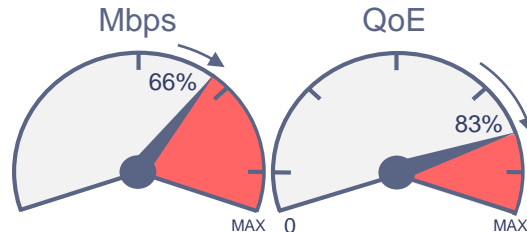


Mbps = Avg Effective DL user throughput

CAPEX-FREE POTENTIAL

10-20% quality improvement potential is typically identified from Capex-free RAN optimisation.

- RF design should provide better coverage & quality in many locations
- Traffic steering optimisation can notably improve customer experience
- Parameter optimisation can improve the spectral efficiency and performance
- Carrier aggregation optimisation can provide better spectrum utilisation

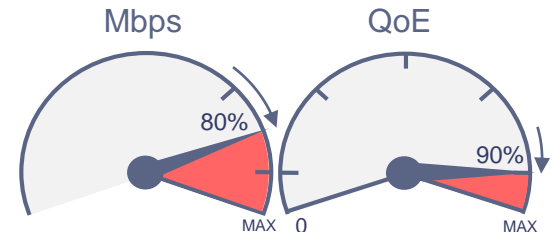


QoE = % of time Effective DL user throughput > 10Mbps

CAPEX OPTIMISATION

20-30% Capex savings can be achieved, while reaching the quality targets with additional RAN investments

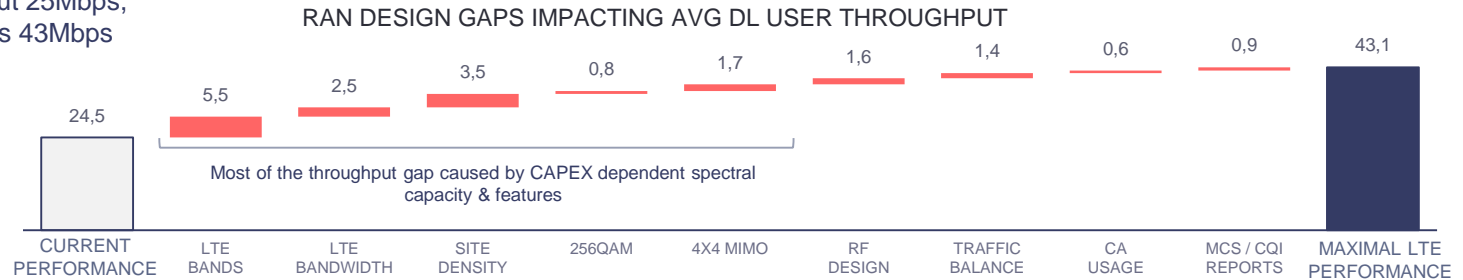
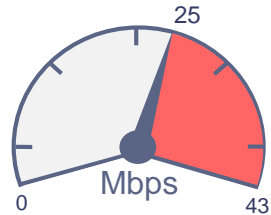
- LTE & 5G bands are deployed where they have the highest quality & QoE impact
- 3G spectrum is re-farmed to LTE when no risk for quality degradation
- New sites are implemented where they are critical for quality improvement
- Features and antenna solutions are deployed when proven effective



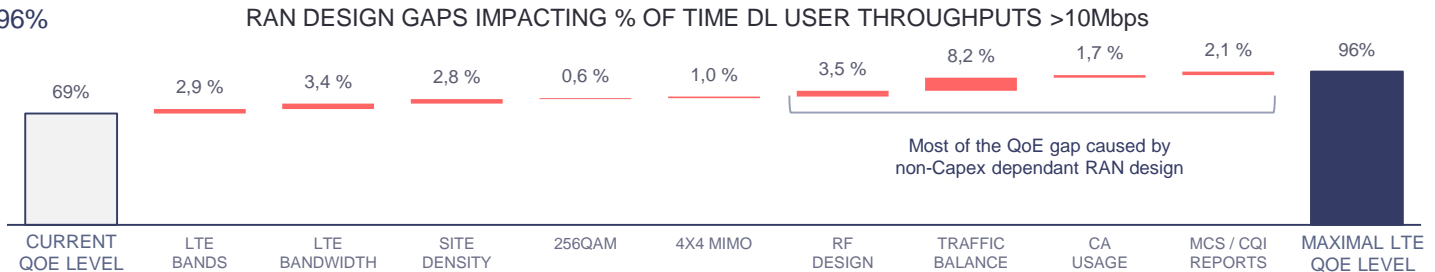
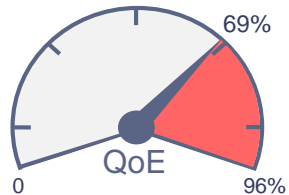
EXAMPLE OPERATOR CASE

RAN DESIGN GAPS AGAINST MAXIMAL PERFORMANCE

Current LTE user throughput 25Mbps, when maximal achievable is 43Mbps



Current QoE level 69%, when maximal achievable level is 96%

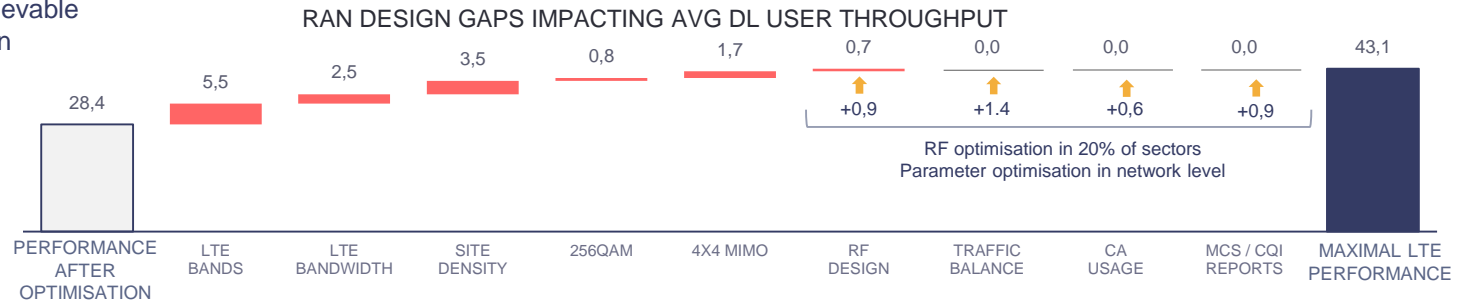
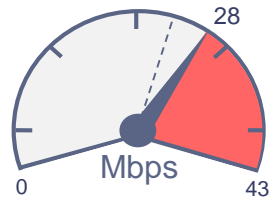


EXAMPLE OPERATOR CASE

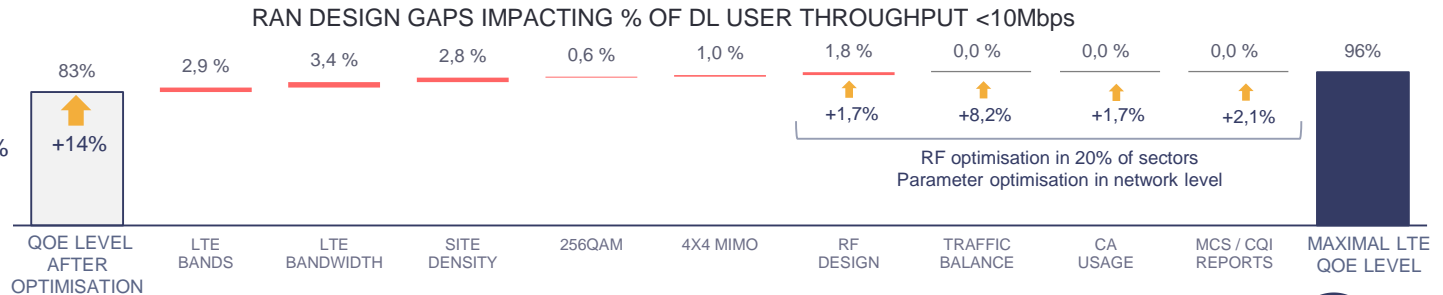
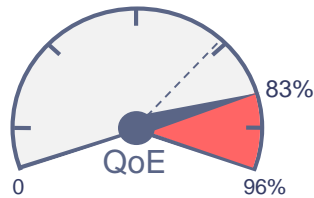
CAPEX-FREE IMPROVEMENT OPPORTUNITIES

LTE optimisation has biggest impact on the customer experience

3.9Mbps improvement achievable by CAPEX-free optimisation



14%-points improvement achievable for QoE level

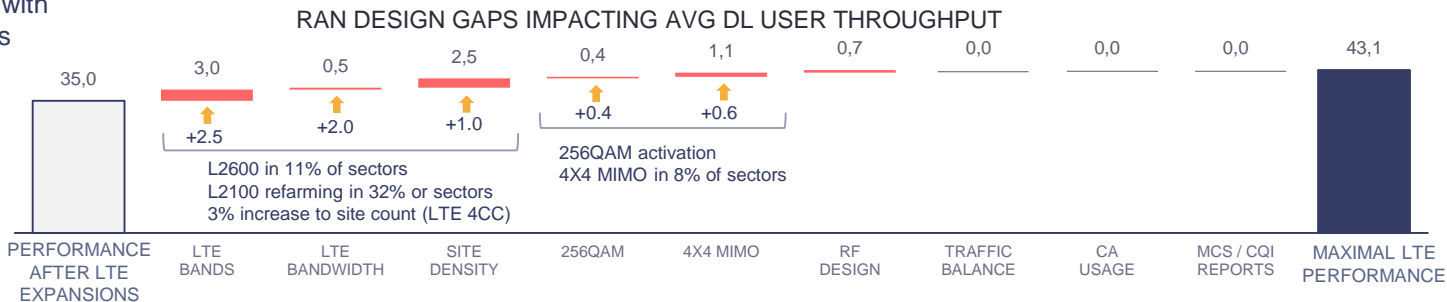
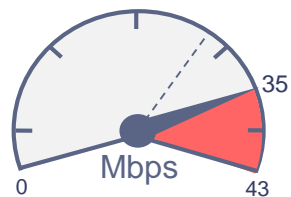


EXAMPLE OPERATOR CASE

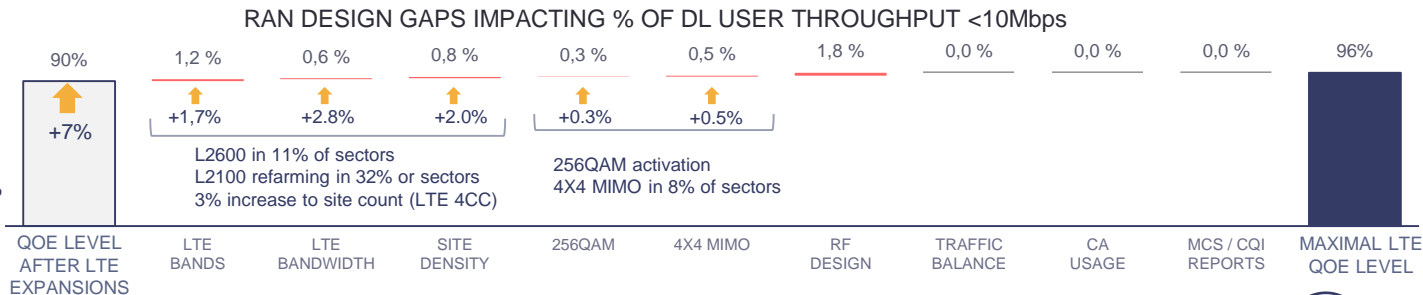
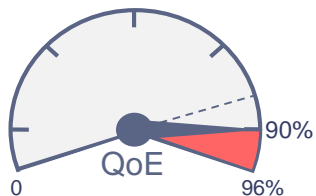
CAPEX-OPTIMISED LTE EXPANSIONS

LTE CAPEX impacts both average throughput and customer experience

Further +6.6 Mbps feasible with LTE expansions & new sites



QoE improves further 7%-points, meeting target level of 90%

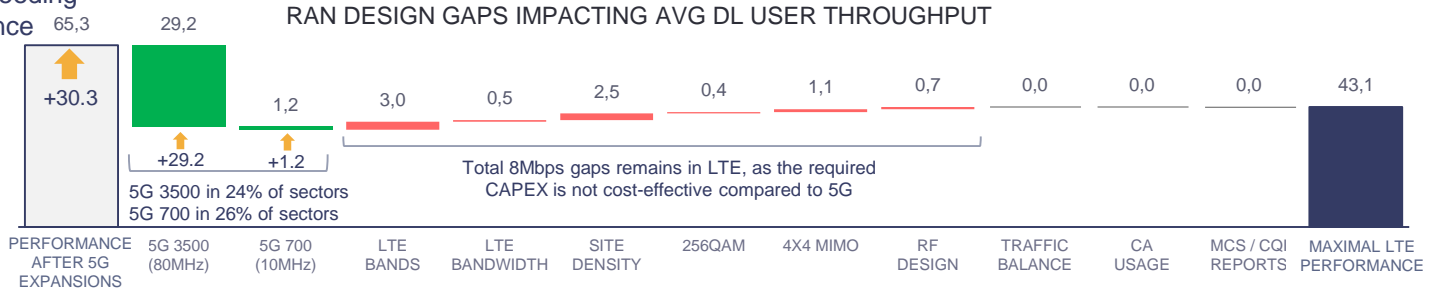
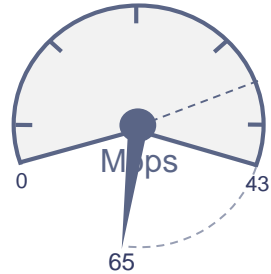


EXAMPLE OPERATOR CASE

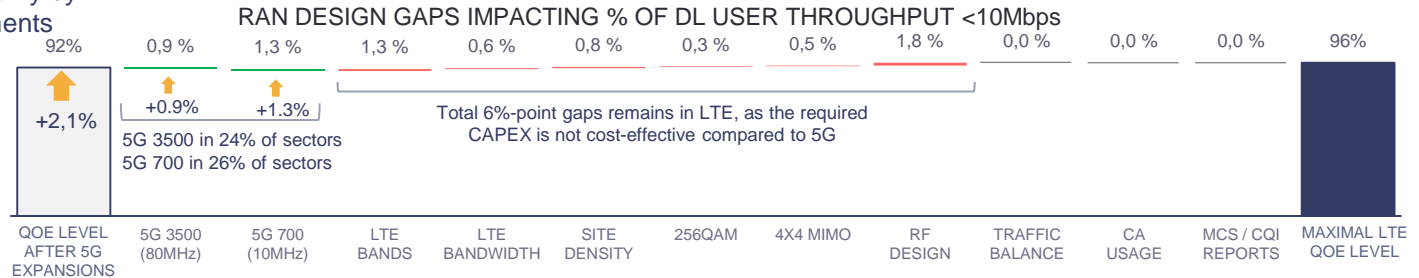
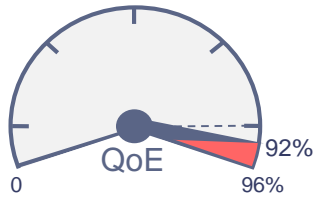
OPTIMISED 5G ROLLOUT

5G CAPEX impacts mainly on the average user throughputs

+30Mbps from 5G-3500, exceeding the maximum LTE performance



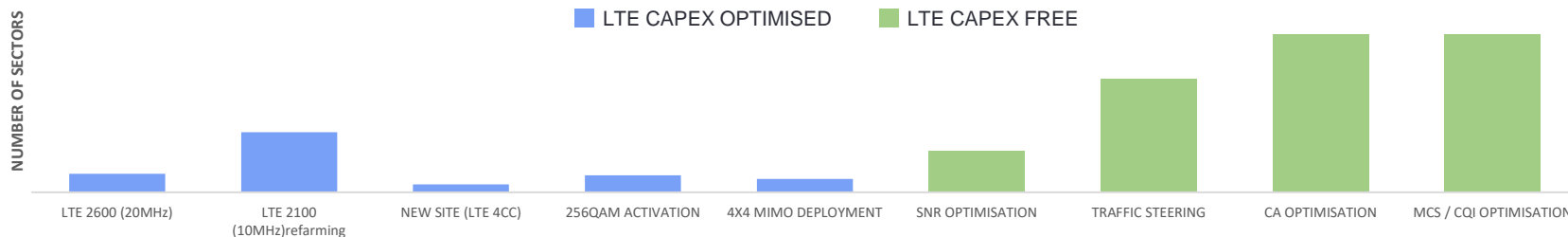
QoE improves 2%-points, mainly by the selected 5G-700 deployments



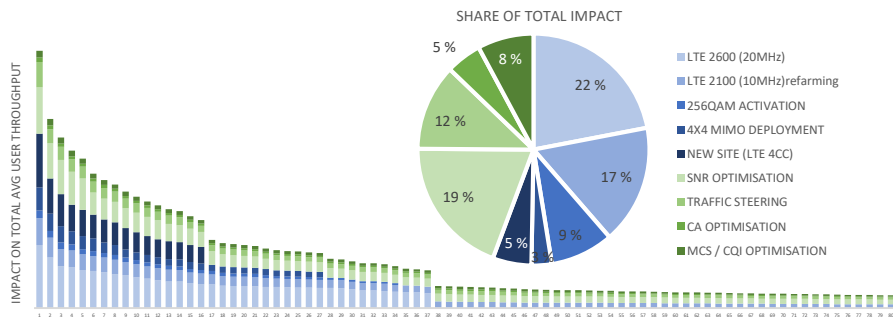
EXAMPLE OPERATOR CASE

LTE ACTIONS PRIORITISED IN SECTOR LEVEL

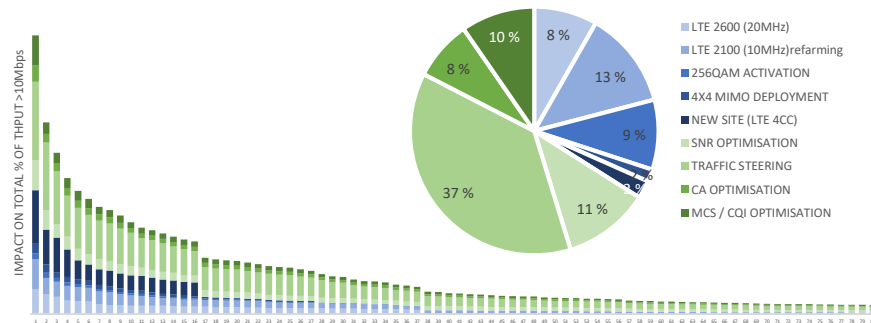
RECOMMENDED LTE ACTIONS TO MITIGATE RAN DESIGN GAPS



TOP SECTORS FOR LTE ACTIONS & IMPACT ON TOTAL AVG USER THROUGHPUT



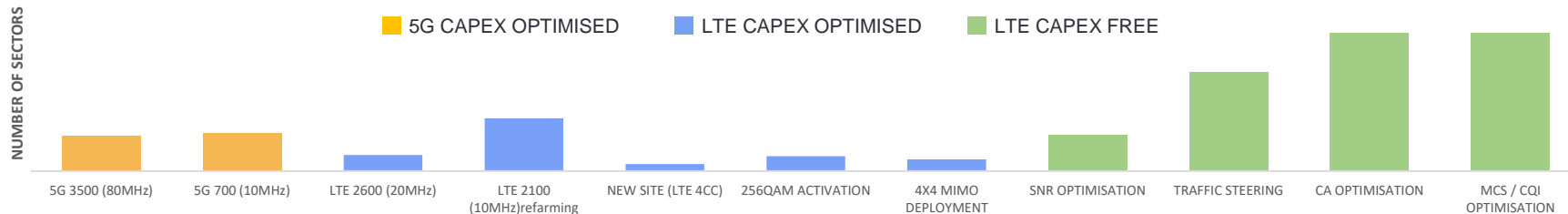
TOP SECTORS FOR LTE ACTIONS & IMPACT ON TOTAL % OF USER THROUGHPUT <10Mbps



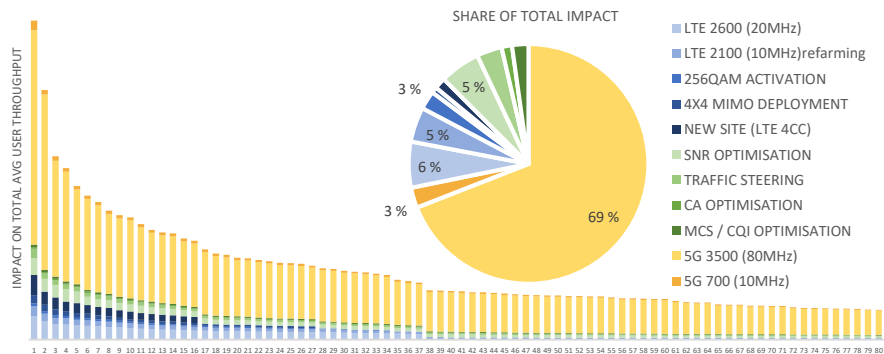
EXAMPLE OPERATOR CASE

5G EXPANSIONS PRIORITISED IN SECTOR LEVEL

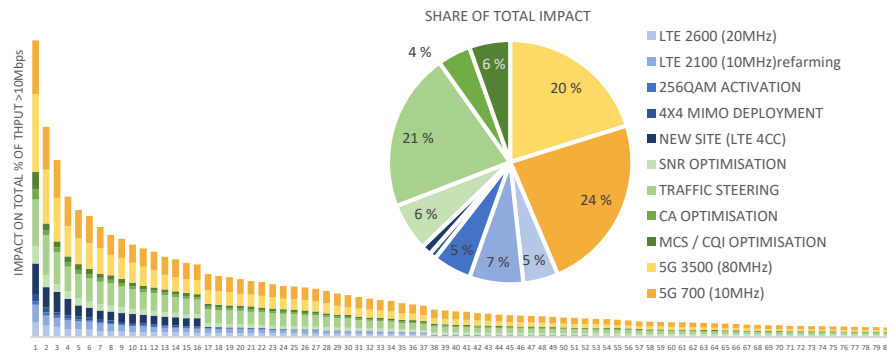
RECOMMENDED LTE & 5G ACTIONS TO MITIGATE RAN DESIGN GAPS



TOP SECTORS FOR LTE & 5G ACTIONS & IMPACT ON TOTAL AVG USER THROUGHPUT



TOP SECTORS FOR LTE & 5G ACTIONS & IMPACT ON TOTAL % OF USER THROUGHPUT <10Mbps



DETAILED & ACTIONABLE REPORT

1. Sector level diagnostics report (Excel spreadsheet)

- RAN design gaps and their impact on quality
- Improvement potential from CAPEX-free optimisation actions
- Improvement potential from LTE & 5G expansions

The table displays a comprehensive list of RAN design gaps and their impact on quality, categorized by sector and action type. It includes columns for metrics such as 'Impact on Quality' and 'Improvement Potential'.

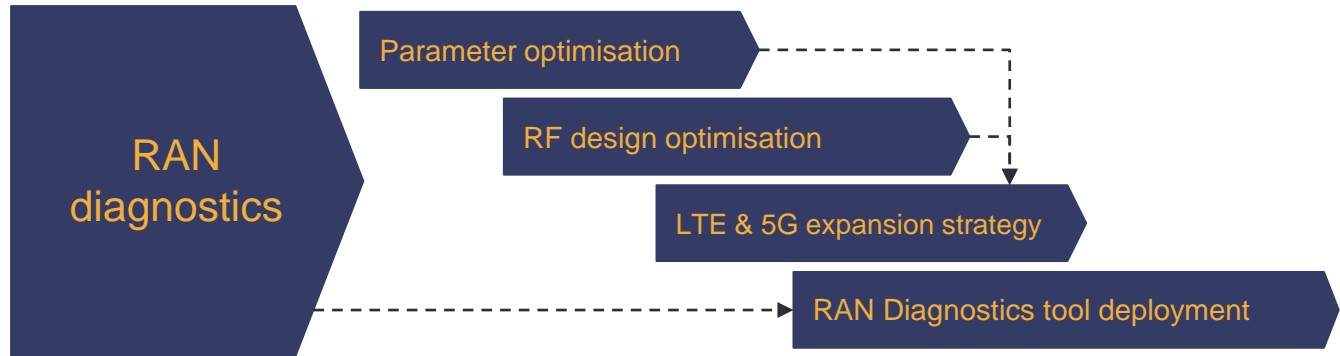
2. Conclusive report (PDF)

- Summary of RAN design gaps and improvement potential
- Descriptions of the RAN design gaps and their mitigation plan
- Prioritised list of recommended optimisation & expansion actions



RAN DIAGNOSTICS IS THE EASY FIRST STEP

- Based on readily available operator data (PM data / measurement logs)
- Can be executed and reported fully remotely (due to Covid-19 restrictions)
- Quick results, reporting three weeks from data collection
- Omnitele available for follow-up execution – with SLA on improvement
- Diagnostics can be deployed as stand-alone tool for operator use



Please contact us for
further information



Contact

Name Arnold Van Holten
Title Head of Sales & Marketing
Phone +31 646 376 215
Email arnold.vanholten@omnitele.com

Omnitele Ltd

Phone +358 9 695 991
Email contact@omnitele.com
Website www.omnitele.com
Address Omnitele Ltd. Mäkitorpantie 3B, 00620 Helsinki, Finland

