



# Rethink Technology Research

## RAN Service



# Macro Layer Deployments and Trends

## 3G to 5G, 2014-2021

### BROCHURE

## Updated in February 2017



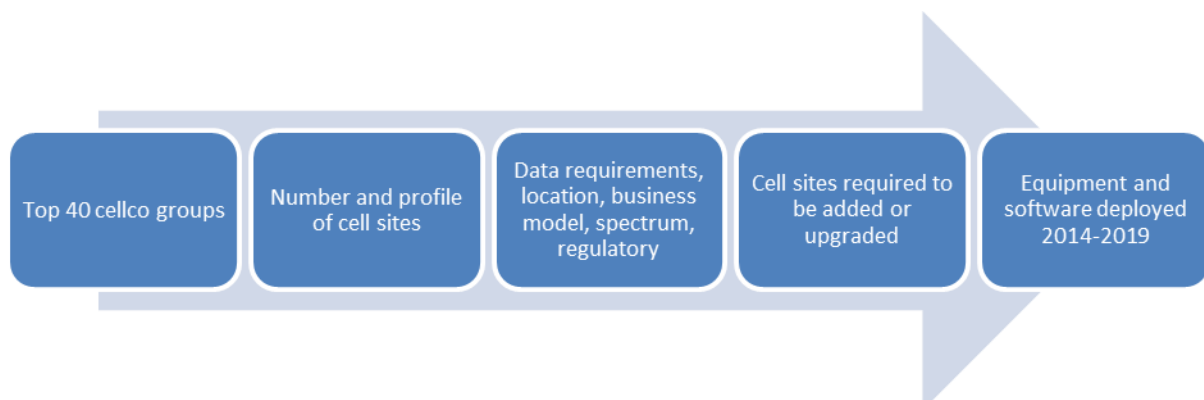
All modules contain between 6 and 15 data tables plus regional breakdown, with accompanying commentary consisting of graphs and concise commentary on the assumptions underlying the forecasts, and the key factors driving them.

The wireless forecast included in this report is based on research on the top 40 international mobile operator groups, which account for 80% of the global mobile subscribers (IMG-40). From this representative group of operators, the macrocell and metrocell forecasts are developed.

From the starting point of a calculation of the number of cell sites already deployed worldwide, forecasts were made of the numbers of base stations that would be rolled out a) to brand new sites and b) to replace or upgrade existing sites. These deployment forecasts were then categorized by network topology, spectrum band, spectrum mode, region and other factors. The equipment deployed in each case was also surveyed and modeled.

These forecasts were based on a combination of data from:

- Detailed surveys, interviews and operator-by-operator modeling of the IMG-40 groups.
- Studies of the deployments and strategies of the top 100 4G operators, as tracked by Rethink Technology Research's quarterly surveys, interviews and desk research.
- Deeper interviews with senior executives at 25 tier one operators about their detailed plans for RAN deployments to 2021.
- Input from ecosystem vendors on shipments, technology strategies and competitive landscape, also updated quarterly.



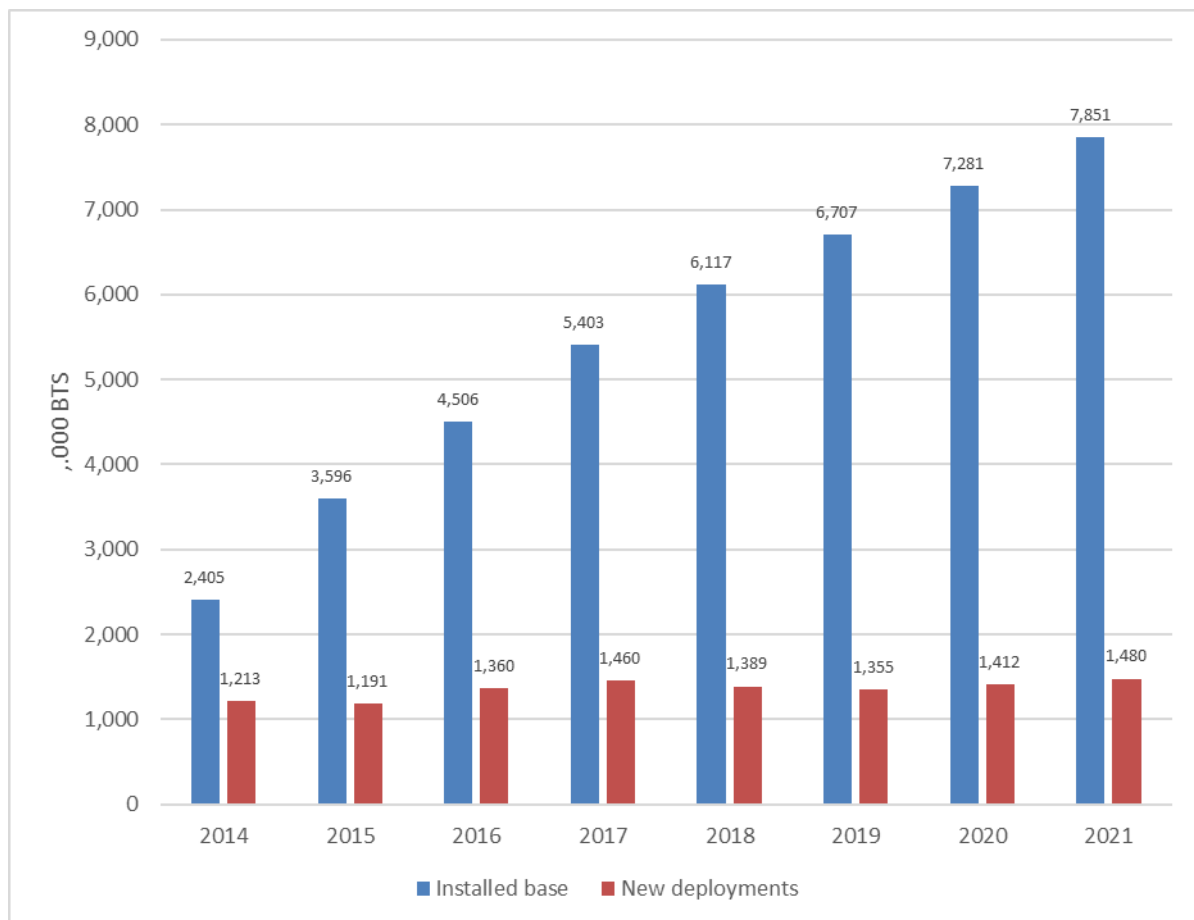


# Sample from the Report

## Tables 1-3. Deployments and Installed base by region

Deployment and upgrade of macro layer base stations will experience overall CAGR (compound annual growth rate) of just under 3% in the period from 2014 to 2021. This reflects a slight increase on the figure for 2013 to 2020, mainly because of the start of 5G deployments by early adopters in 2021, as well as continuing 4G expansion during that year, especially in sub-Saharan Africa.

New deployments experienced a slight dip between 2014 and 2015 because, although LTE was gaining ground, there was a sharp fallback in 3G expansion and some very large 4G projects, such as Verizon's, had peaked. From 2015 until 2017, growth in deployments and upgrades is seen each year, totalling a healthy 22%, but then there will be a 7% decline in growth from 2017 to 2019, followed by a recovery in 2020 and 2021. In 2021, deployments and upgrades will overtake the period's previous peak of 1.46m in 2017, reaching 1.48m.



*Numbers of macrocells deployed (including upgrades to existing sites), and installed base*



# Sample from the Report

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### Macro Layer Deployments and Trends 3G to 5G, 2014-2021

#### Sheet 1 - Macrocell deployments and installed base 2014-2021

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Table 2	Macro layer base station deployments and upgrades, inc software, by region
Table 3	Macro layer base station installed base by region
Table 4	Macro base station deployments by technology
Table 5	LTE or multimode macro layer base station deployments and upgrades
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#### Sheet 2 - Macrocell deployments by architecture

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#### Sheet 3 - LTE-A, spectrum bands and mode

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Table 10	LTE and multimode macrocell installed base by frequency band - bands supported, alone or in combination
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# Sample from the data modules

<i>Macro cells are counted in base stations (there may be multiple BTS per cell site)</i>									
<i>In virtualized or centralized architectures, end sites are counted.</i>									
<b>1. LTE and multimode macrocell installed base and deployments/upgrades (including software)</b>									
	2014	2015	2016	2017	2018	2019	2020	2021	CAGR
Installed base	*****	*****	*****	*****	*****	*****	*****	*****	*****
New deployments	*****	*****	*****	*****	*****	*****	*****	*****	*****
,000 units	*****	*****	*****	*****	*****	*****	*****	*****	*****
<b>2. Macro layer base station deployments and upgrades, inc software, by region</b>									
	2014	2015	2016	2017	2018	2019	2020	2021	CAGR
NA	*****	*****	*****	*****	*****	*****	*****	*****	*****
Europe	*****	*****	*****	*****	*****	*****	*****	*****	*****
APAC	*****	*****	*****	*****	*****	*****	*****	*****	*****
MEA	*****	*****	*****	*****	*****	*****	*****	*****	*****
CALA	*****	*****	*****	*****	*****	*****	*****	*****	*****
Total	*****	*****	*****	*****	*****	*****	*****	*****	*****
<i>1,000 units deployed or upgraded with new equipment/software</i>									



## Who Should buy these reports?

Every business which is involved with - or wants to be involved with - mobile and wireless, particularly those with an interest in RAN deployments and technologies, including small cells/HetNet and virtualization. The reports include essential information and analysis for mobile and converged operators; their hardware and software suppliers; the wider value chain, including components suppliers and vertical market integrators; as well as investors in these areas, and professional institutions whose members will be affected by the shifts and changes in these markets.

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## What RAN Research modules are available?

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### Rethink Small Cells

Module 1: Small cells deployments and installed base 2014-2021

Module 2: Enterprise small cells 2014-2020

Module 3: MNO WiFi deployments and installed base 2014-2020

### HetNet

Module 1: HetNet deployments and key trends 2014-2021

Module 2: Macro layer deployments and key trends 2014-2021

### Optimization

Module 1: SON deployments and key trends 2014-2020

Module 2: RAN optimization deployments and key trends inc VoLTE 2014-2020

### Mobile network ownership, MVNOs and NWaaS

Module 1 : Wholesale, sharing and NWaaS 2015-2020

### Virtualization

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Module 2: NFV and SDN deployments and key trends 2015-2020

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Single copy with updates over 12 months	4,000	2,600	3,700
Single copy with updates over 12 months and a Q&A session	8,000	5,200	7,400

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