



Brochure: HetNet Deployments and Trends  
Multilayer and Multiband Networks  
Updated January 2017

# Rethink Technology Research RAN Service



## HetNet Deployments and Trends Multilayer and Multiband Networks 2014-2021

Explanatory notes and brief commentary to  
accompany the Excel spreadsheet

January 2017

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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.

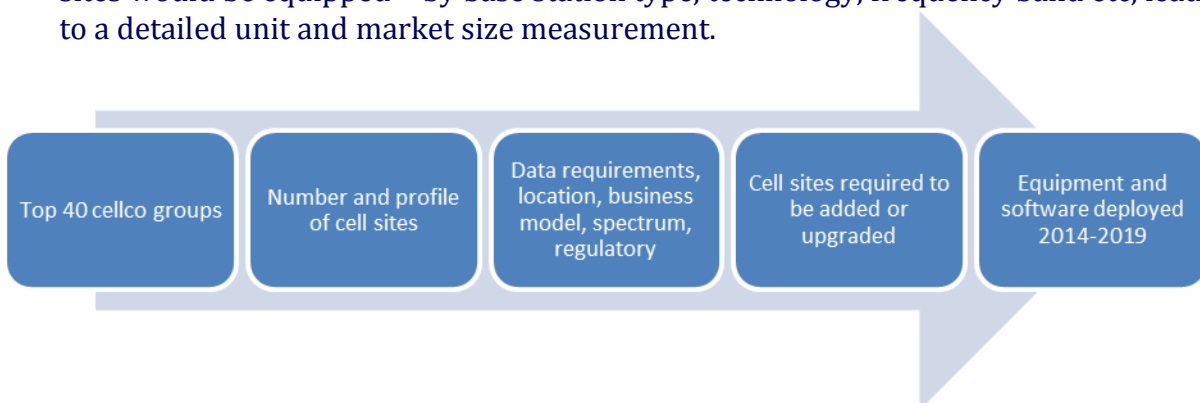
The wireless forecast included in this report is based on research on the top 40 international mobile operator groups, which account for 80% of the global mobile subscribers (IMG-40). From this representative group of operators, the macrocell and metrocell forecasts are developed.

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.

Based on the surveys of operators and vendors, it was then calculated how those cell sites would be equipped – by base station type, technology, frequency band etc, leading to a detailed unit and market size measurement.

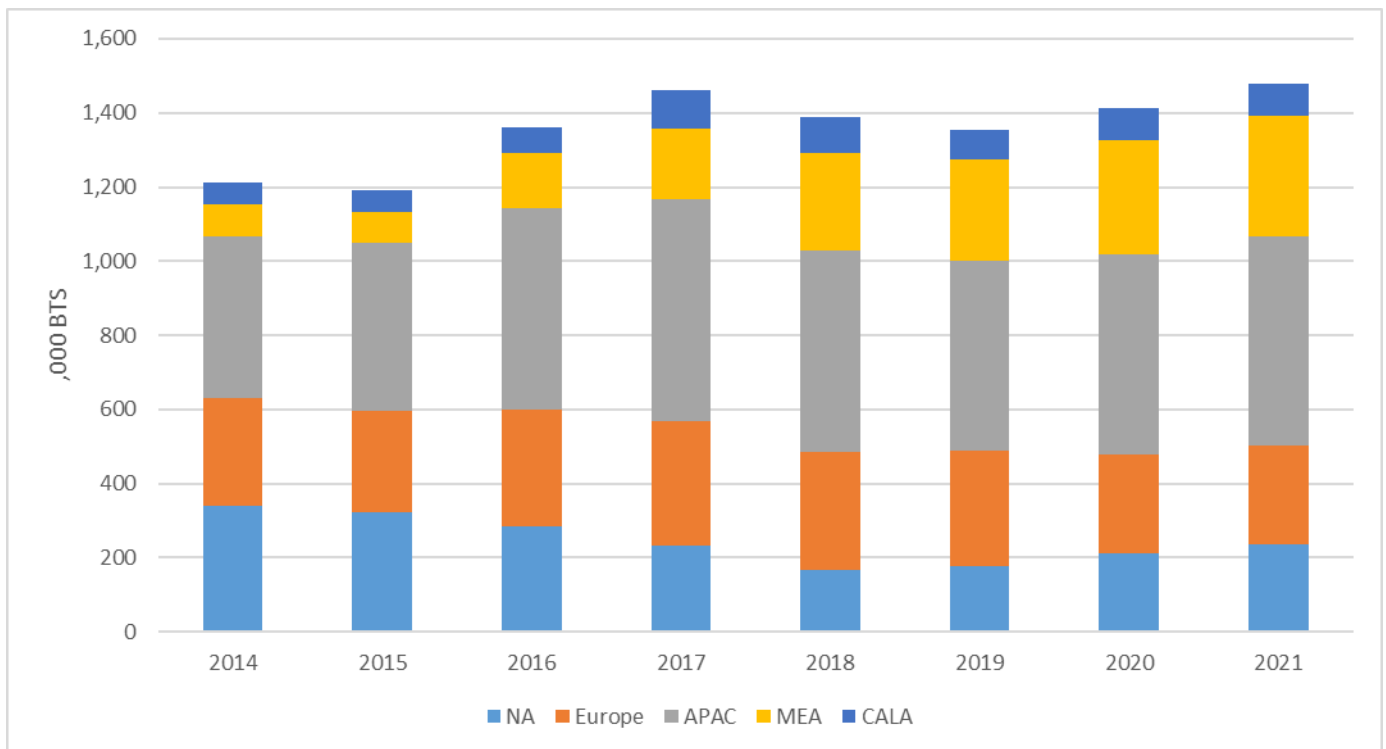




# Sample from the Report

**Tables 1 and 3. LTE or multimode macro layer base station deployments and upgrades, inc software, by region; installed base by region 2014-2021**

Deployment of new macro layer base stations will experience overall CAGR of 3% in the period from 2014 to 2021. This growth will largely be driven by LTE, whether single-mode or combined with 3G and/or 2G. The deployment of new base stations with 2G integrated is in decline throughout the period while 3G deployment, integrated with 4G, will peak in 2016. After that, 3G expansion will slow and many operators will rely on LTE – which will have fallen in price – for coverage, while others will retain a 2G/4G approach while slowing 3G roll-out, especially in countries, like non-urban areas of China, India and some African countries, where 3G was immature at the point when LTE became mainstream.





*New deployments and upgrades of macro layer base stations, LTE-only and multimode, by region, 2014-2021*

# Sample from the Report

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# Sample from the data modules

2. New deployments and upgrades of cellular and cellular/WiFi small cells by region (exc residential)									
	2014	2015	2016	2017	2018	2019	2020	2021	CAGR
Africa									
APAC									
CALA									
CIS									
Europe									
Middle East									
N America									
Total									
<i>,000 units deployed or upgraded</i>									
16. LTE macrocell installed base by spectrum combination									
	2014	2015	2016	2017	2018	2019	2020	2021	CAGR
One LTE band									
Two LTE bands									
Three or more LTE bands									
Interband CA dual									
Interband CA triband									
Intraband CA									
2G/3G integrated									
Total installed base									
Total bands connected									
<i>,000 BTS supporting each combination - installed base</i>									



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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. Our reports are usually purchased by senior operational executives, strategists, analysts and marketing departments.

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