

# Despite LTE, HSPA+ keeps evolving

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## Abstracts

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Despite the hype around LTE, HSPA is far from being old-fashioned. Two years ago, Ovum stated that HSPA+ rollouts would flourish and be adopted globally progressively, with an initial preference for the 21Mbps version. However, HSPA+ will keep being enhanced in upcoming 3GPP specifications. The 3GPP Release 8 (R8) specification not only introduces LTE, but also two enhanced versions of HSPA+, including Dual-Cell (DC, aka Dual-Carrier) which brings peak downlink rates of 42Mbps. This report describes the main HSPA+ enhancements brought by 3GPP R8, R9, and R10. It also offers early trends for these future HSPA+ options.

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Executive summary

In a nutshell

Ovum view

Key messages

HSPA/HSPA+ will play a leading role by 2015

HSPA dominates to 2015

Status of HSPA+ today

Technical overview of HSPA evolutionary options

What is in the 3GPP specifications?

Release 7 offers two options to enhance HSDPA: higher modulation scheme or MIMO

Release 8 introduces Dual-Cell (DC) capability

Release 9 allows aggregation of carriers in different spectrum bands

Release 10 introduces the support of Multi-Carrier (MC) operation

What are the key benefits of these HSPA enhancements?

Improved peak/average data rates, improved capacity

Enhanced cell-edge performance

More flexible use of spectrum thanks to Dual-Band capability

Better latency

What is the impact on networks and devices of the different enhanced HSPA+ variants?

What does it mean to roll out HSPA+ and its enhanced versions from a network perspective?

The easiest evolution: HSPA+ using 64QAM

MIMO potentially means a need for additional hardware

HSPA+ using Dual-Carrier (or Multi-Carrier)

HSPA+ using Dual-Band feature requires a software upgrade

All wireless network infrastructure vendors develop enhanced HSPA+ solutions

All vendors already supply R7 MIMO-, R7 64QAM-, and R8 DC-HSDPA-compliant systems

What's next?

What does it mean to roll out HSPA+ and its enhanced versions from a device perspective?

New devices are needed for each HSPA+ flavor

Still more complex to get MIMO-capable devices

LTE devices are likely to mostly support HSPA+ capabilities as well

Availability of chipsets and devices for HSPA+ R8 (and beyond) is still burgeoning

Qualcomm leads the pack for enhanced HSPA+

Still early days for enhanced HSPA+ CPEs

Many manufacturers are going to follow Sierra Wireless in the supply of R8 DC-HSDPA devices

Possible HSPA+ evolution paths

Early trends start to materialize

An increasing number of operators are announcing enhanced HSPA+ plans

R8 Dual-Carrier technology is likely to become the favorite path in the short term

In the mid-term, MIMO can be added to DC-HSDPA/64QAM

Case studies

SmarTone-Vodafone in Hong Kong

Telstra's HSPA+ plans in Australia

3 Scandinavia (Denmark and Sweden)

Canadian CDMA operator Telus deploys HSPA+ as a path to LTE

Will HSPA+ evolutions delay LTE?

HSPA+ and LTE are complementary

HSPA+ evolutions give greater room to maneuver to several operators before they migrate to LTE

Some players with old UMTS/HSPA networks will migrate earlier to LTE

CDMA operators with LTE plans will stick to their plans or even accelerate their migration to LTE due to HSPA+ competition

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