

Report to 3GPP PCG #25

October 27, 2010

Global mobile Suppliers Association (GSA)

www.gsacom.com

Scope of report



- Mobile broadband update – including uptake of LTE
- GSA-organized seminars: Asia, Europe
- On-line survey

Global mobile Suppliers Association (GSA)

- ❑ Expanding GSA portfolio of surveys, reports, fact sheets
- ❑ All available at www.gsacom.com



Facts-based research by GSA
Leveraging strong links in the industry
Objective analysis
Widely referenced by the industry,
commentators, analysts, policy-
makers, media

Capacity and performance evolution

WCDMA, HSPA and HSPA+

LTE

EDGE and EDGE Evolution

Eco-systems, including user devices

Mobile broadband success stories

Mobile HD Voice

Mobile Broadband Update



HSPA networks now commercially available in 150 countries!!!

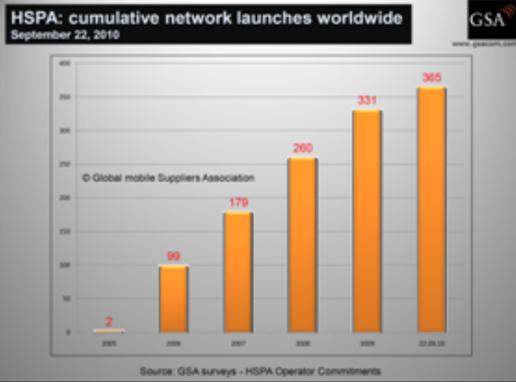
www.gsacom.com

Commercial WCDMA networks	368	HSDPA networks 3.6 Mbps or higher	82.7%
Countries WCDMA launched in	151	HSDPA networks 7.2 Mbps or higher	60%
WCDMA 3G network market share	> 76%	HSDPA devices launched	2,579
WCDMA subs (incl. HSPA) Q2 10	530 m	Commercial HSUPA networks	124
Commercial EDGE networks	531	Networks with HSUPA launched	34%
Countries EDGE launched in	196	HSUPA devices launched	724
HSPA networks with EDGE	> 72%	HSPA devices with EDGE support	> 83%
HSPA network commitments	407	HSPA+ network commitments	127
Commercial HSPA networks	365	HSPA+ network commitment countries	59
Countries HSPA launched in	150	HSPA+ networks launched	73
Live WCDMA networks with HSPA	99%	LTE network commitments	113
HSPA subs (June Q2 2010 estimate)	380 m	LTE network commitment countries	46
Commercial UMTS900 networks	24	Additional pre-commitment network trials	43

WCDMA-HSPA mobile broadband wallchart - September 2010



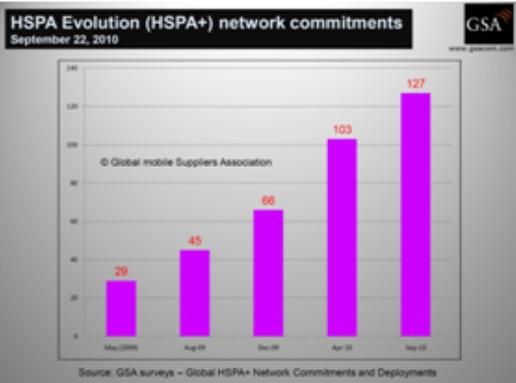
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127 operators have committed to HSPA+

73 commercial HSPA+ systems in 41 countries

42 Mbps peak downlink data speed is market reality



368 commercial WCDMA networks in 151 countries

HSPA is driving growth of mobile broadband globally

99% of WCDMA networks launched HSPA

24 commercial UMTS900 networks

60% HSPA networks support 7.2 Mbps peak downlink or higher

34% of HSPA operators have launched HSUPA - now live in 63 countries

1 in 5 HSPA operators launched HSPA+

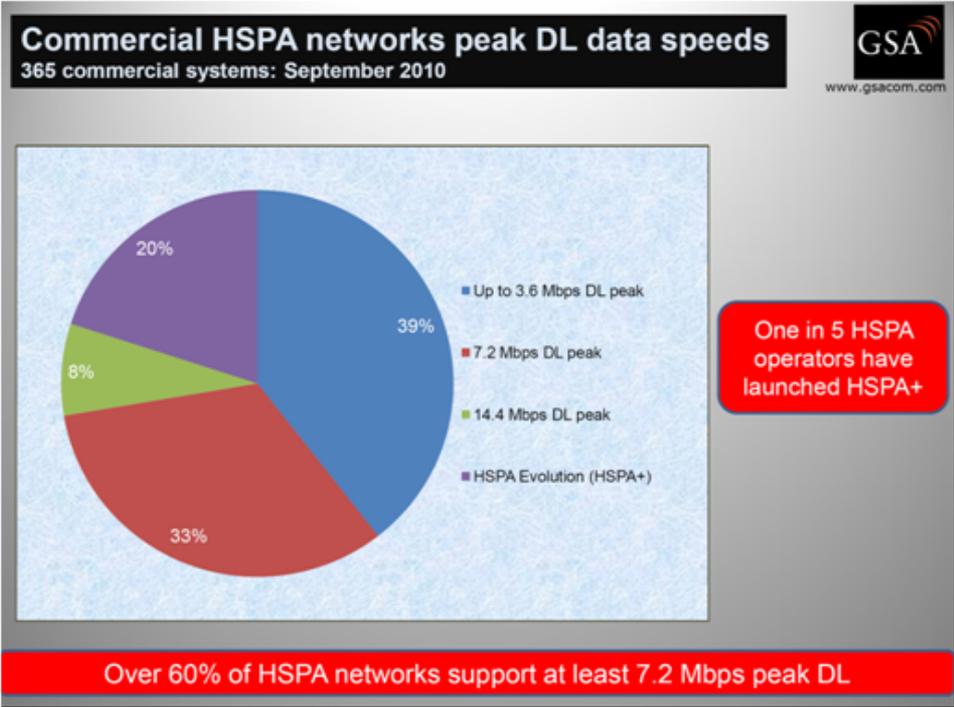
570+ mil. WCDMA subs globally

407 HSPA operator commitments in 156 countries

365 commercial HSPA networks in 150 countries

2,579 HSPA user devices launched

72% of HSPA operators have also committed to EDGE



Uptake of LTE

- a global phenomenon



156 operators in 64 countries are investing in LTE

- 113 LTE network commitments in 46 countries
- 43 additional pre-commitment LTE trials
- At least 55 LTE networks are anticipated to be in commercial service by end 2012

Evolution to LTE report (GSA) – October 26, 2010

7 commercial LTE systems are launched:

TeliaSonera - Norway
TeliaSonera - Sweden
MTS - Uzbekistan
Ucell – Uzbekistan
Mobyland and CenterNet - Poland
MetroPCS - USA
Mobilkom – Austria

Evolution to LTE report (GSA) - October 26, 2010

Rapid increase in data traffic over the past 3 years, currently supported by HSPA and HSPA+ systems, is driving the interest in deploying LTE as quickly as possible

The growing LTE eco-system

- ❑ LTE FDD and TDD devices
- ❑ multi-mode, multi-frequency

LTE product categories launched in the market by leading suppliers:

- ❑ Smartphone
- ❑ USB modem
- ❑ Module (for embedded applications)
- ❑ Netbook
- ❑ Chipsets



Evolution to LTE INFORMATION PAPER

GSM/3G MARKET/TECHNOLOGY UPDATE



Global mobile Suppliers Association
October 26, 2010

Growing LTE eco-system

Mobile phones, computer and consumer electronic devices including notebooks, netbooks, UMPCs, gaming devices, cameras, and PMPs will have embedded LTE connectivity. A huge growth in M2M applications enabled by LTE is forecast. Since the LTE standard supports hand-over and roaming to existing mobile networks, most devices will ensure ubiquitous mobile broadband coverage from day one.

- Single mode (LTE) and multi mode (LTE/HSPA) modems are in the market
- The Verizon Wireless LTE launch will be supported by 700 MHz dongles and datacards, with smartphones and tablets arriving around May 2011.
- The first LTE phone is launched (on the MetroPCS network, operating in AWS spectrum)
- Several test equipment manufacturers provide LTE test platforms and solutions
- The Global Certification Forum, a partnership between network operators, device manufacturers and the test industry, has been developing the global certification scheme for LTE devices since March 2008 (www.globalcertificationforum.org)

The LTE standard comprises TDD and FDD modes. Most equipment is the same for FDD and TDD modes, as only radio units differ. In addition to the FDD devices already launched by a number of suppliers, several leading companies have indicated early availability of LTE TDD chipsets capable of operating in 2.3/2.5 GHz spectrum. Some devices support multi-mode operation e.g. LTE FDD and TDD, HSPA/HSPA+, EDGE and TD-SCDMA. A selection of LTE-capable chipsets, platforms and user devices is listed below:

Supplier	Model name	Form factor
4M Wireless	PS100 UE protocol stack	Software
Altair Semi	FourGee™ 3100/6200	Chipset
Altair Semi	FourGee™ 6150 for TDD	Chipset
Beceem	BCS500 LTE FDD/TDD and WINAX™	Chipset reference design
Continous Computing, pscChip, Cavium Networks	LTE femtocell reference design	Chipset reference design
Huawei	E398 LTE/GSM/HSPA 2.6 GHz, 900 MHz	USB modem
Icera	Dual mode HSPA/LTE soft modem	Chipset
Innovidel	LTE TDD	Chipset, USB modem

Supplier	Product	Form factor
Infinion	SMART™ LU LTE / 3G / 2G multimode RF Transceiver	Chipset
LG	LD100	USB modem
LG	M13 test device CDMA EV-DO/LTE dual mode band 13	USB modem
LG	LTE handset modem chip	Chipset
MediaTek	LTE mobile terminal platform licensing arrangement with NIT DoCoMo	Chipset
MimoCon	m/MobilePHY™ 3GPP Release 8 software stack supporting FDD and TDD	Software
Motorola	FDD LTE USB-LTE 7110	USB modem
Motorola	RD-3 multi mode	USB modem
Nokia	MDM9200 (WCDMA-HSPA, HSPA+ and LTE)	Chipset
Qualcomm	MDM9600 (CDMA2000 1X, EV-DO Rev. B, SV-DO, SV-LTE, WCDMA-HSPA, HSPA+ and LTE)	Chipset
Qualcomm	MSM8960 (CDMA2000 1X, EV-DO Rev. B, WCDMA-HSPA, HSPA+ and LTE)	Chipset
Qualcomm	Chipset	Chipset
Runcom	GT-B3710 (2.6 GHz)	USB modem
Samsung	GT-B3730 (LTE/2G/3G)	USB modem
Samsung	NT50 10 inch with Kalnia LTE chipset	Netbook
Samsung	SCH-900 multi-mode CDMA-LTE handset	Handset
Samsung	SQN3010 LTE TDD being prepared for sampling	Chipset
Sequans	AirPrime MC7750 LTE EV-DO, HSPA+	Module
Sierra Wireless	AirPrime MC7700 LTE, HSPA+	Module
Sierra Wireless	AirPrime MC7710 LTE, HSPA+	Module
Sierra Wireless	M700 LTE quad band	Chipset
ST-Ericsson	M710 multi mode LTE quad band	Chipset
ST-Ericsson	LTE TDD Model Library	Software
Synopsys	LTE Femto/Pico eNodeB solution compliant to 3GPP Rel 8 & Femto Forum specs	Chipset reference design
Tata Elxsi	T130 13.3 inch: choice of 4 Intel LTE JLV processors	Notebook
Toshiba	Odyssey 9000 family	Chipset
Wavesat	AL600 LTE/UMTS/EV-DO	USB modem
ZTE	AL620 LTE/UMTS/EDGE	USB modem
ZTE	ZLR-2070S	Router
ZyXEL		

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GSA-organized seminars

- ❑ mobile broadband
- ❑ technology, migration, business models



Hong Kong – September 6, 2010

Presentations available at
www.gsacom.com/programs/mb2010.php4



London – September 27, 2010

Presentations available at
www.gsacom.com/programs/gsambrf.php4

Mobile Broadband Future – Your Vision

- online survey launched
- participate at www.gsacom.com

A graphic for the 'Mobile Broadband Future Your Vision Survey'. It has a red-to-blue gradient background. The text is as follows:

Mobile Broadband Future
Your Vision
Survey
How will mobile networks cope with large increases in data - especially from the media and publishing industry?
Submit your views for the chance to win an iPad
[Online survey](#)

Seeking answers to:

“As mobile broadband data becomes an embedded consumer service how will mobile networks cope with large increases in data especially from the media and publishing industry?”

Results will be published in December 2010