

Report to 3GPP PCG #28, Shanghai

April 26, 2012

Jonas Sundborg

GSA - Global mobile Suppliers Association

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Mobile broadband update

HSPA, HSPA+, LTE

Communications activities

Additional support to 3GPP

3GPP seminars

3GPP paper – guest contribution invited

457 commercial HSPA operators

□ commercial HSPA operators per region



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HSPA - Key Facts:

- * 489 HSPA operator network commitments in 185 countries/territories
- * 457 commercial networks launched in 178 countries
- * ALL of the world's WCDMA operators have commercially launched HSPA service
- * 348 commercial HSDPA networks (76%) support 7.2 Mbps peak or higher downlink speeds
- * 257 HSPA+ network commitments, including 202 HSPA+ networks commercially launched in 100 countries
- * 77 commercial 42 Mbps DC-HSPA+ networks launched

Source: GSA report - HSPA Operator Commitments (April 16, 2012)

HSPA+ commercial network launches



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HSPA+ is a mainstream system technology for delivering mobile broadband services across the world

257 operators have committed to HSPA+ network deployments

202 HSPA+ systems are in commercial service in 100 countries

44% of HSPA operators have commercially launched HSPA+

77 operators have commercially launched 42 Mbps DC-HSPA+ systems

GSA forecasts that at least one hundred DC-HSPA+ networks will be in commercial service by end 2012

HSPA and HSPA+ user devices ecosystem



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GSA's database contains over 3,500 HSPA user devices which are launched in the market

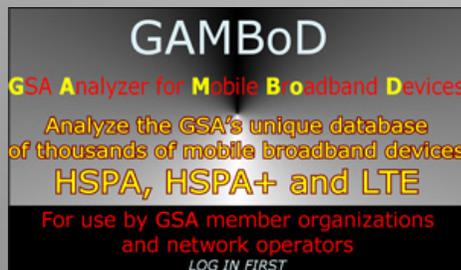
Includes over 300 HSPA+ devices (21 Mbps peak downlink or higher).

Increase of > 50% in the last quarter in number of 42 Mbps DC-HSPA+ user devices launched (now over 130 terminals)

200+ user devices combine LTE with HSPA technologies (HSPA, HSPA+ or DC-HSPA+) i.e. for 3G fallback outside LTE coverage areas

Regarding 900 MHz re-farming for HSPA or HSPA+ deployments, over 750 user devices support UMTS900 = mainstream in European and APAC markets

Source: GSA



LTE networks and trials



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312 operators are investing in LTE in 98 countries

253 operator commitments in 84 countries
59 pre-commitment trials in 14 more countries

64 commercial networks in 34 countries

GSA forecasts 129 commercial LTE networks in 57 countries by end 2012

The number of commercial LTE networks is set to double by the end of 2012. GSA forecasts there will be 129 commercial LTE networks by December 31, 2012

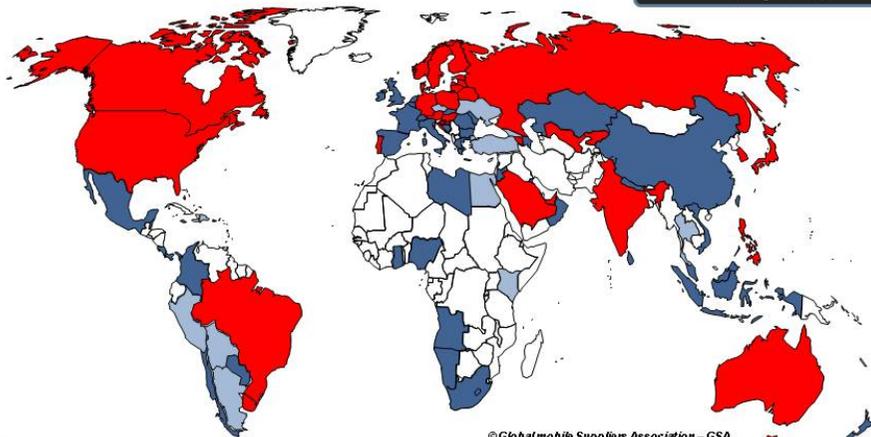
312 operators in 98 countries investing in LTE

- 253 commercial LTE network commitments in 84 countries
- 59 pre-commitment trials in additional 14 countries
- 64 commercial LTE networks launched in 34 countries



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GSA – Evolution to LTE report April 12, 2012
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- Countries with commercial LTE service
- Countries with LTE commercial network deployments on-going or planned
- Countries with LTE trial systems (pre-commitment)

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Global LTE commitments (to April 12, 2012)



312 operators are investing in LTE in 98 countries

253 firm operator commitments to deploy LTE in 84 countries

59 pre-commitment trials in another 14 countries

64 commercial networks launched in 34 countries

Country	Operator	Launch	Country	Operator	Launch	Country	Operator	Launch
Canada	Rogers Wireless	07.07.11	Kuwait	Viva	27.12.11			
Norway	TeliaSonera	14.12.09	Austria	T-Mobile	28.07.11	Armenia	Vivacell-MTS	28.12.11
Sweden	TeliaSonera	14.12.09	USA	Mosaic Telecom	July 2011	Bahrain	Viva Bahrain	01.01.12
Uzbekistan	MTS	28.07.10	Canada	Bell Mobility	14.09.11	Hungary	T Mobile	01.01.12
Uzbekistan	UCell	09.08.10	Saudi Arabia	Mobily (LTE TDD)	14.09.11	South Korea	KT	03.01.12
Poland	Aero2/Mobyland/CenterNet (LTE TDD from 10.05.11)	07.09.10	Saudi Arabia	STC (LTE TDD)	14.09.11	Russia	Yota	15.01.12
USA	MetroPCS	21.09.10	Saudi Arabia	Zain	14.09.11	Canada	TELUS	10.02.12
Austria	A1 Telekom	05.11.10	USA	AT&T Mobility	18.09.11	USA	Peoples Telephone Co-op	14.02.12
Sweden	TeleNor Sweden	15.11.10	UAE	Etsalat	25.09.11	Japan	Softbank (LTE TDD)	24.02.12
Sweden	Tele2 Sweden	15.11.10	Australia	Telstra	27.09.11	Portugal	TMN (Portugal Telecom)	12.03.12
Hong Kong	CSL Limited	25.11.10	Denmark	TDC	10.10.11	Portugal	Vodafone Portugal	12.03.12
Finland	TeliaSonera	30.11.10	Austria	3	18.11.11	Portugal	Optimus	15.03.12
Germany	Vodafone	01.12.10	Puerto Rico	AT&T Mobility	20.11.11	Japan	eMobile	15.03.12
USA	Verizon Wireless	05.12.10	Puerto Rico	Glaro	24.11.11	USA	US Cellular	22.03.12
Finland	Elsa	08.12.10	Kyrgyzstan	Saima Telecom	09.12.11	Croatia	T Mobile/T-Hrvatski Telekom	23.03.12
Denmark	TeliaSonera	09.12.10	Brazil	Sky Brazil (LTE TDD)	13.12.11	Croatia	VIPNet	23.03.12
Estonia	EMT	17.12.10	Finland	DNA	13.12.11	USA	Panhandle (PTCI)	March 2012
Japan	NTT DoCoMo	24.12.10	Uruguay	Antel	13.12.11	Belarus	Yota Bel	01.04.12
Germany	Deutsche Telekom	05.04.11	USA	Cricket	21.12.11	India	Bharti Airtel (LTE TDD)	10.04.12
Philippines	Smart Communications	16.04.11	Singapore	SingTel	22.12.11			
Lithuania	Omnitel	28.04.11						
Latvia	LMT	31.05.11						
Singapore	M1	21.06.11						
South Korea	SK Telecom	01.07.11						
South Korea	LG U+	01.07.11						
Germany	O2	01.07.11						



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253 LTE commitments in 84 countries

Country	Operator	Expected launch
Norway	TeliaSonera	Launched 14.12.09
Sweden	TeliaSonera	Launched 14.12.09
Uzbekistan	Be'IS	Launched 21.07.10
Uzbekistan	Ucell	Launched 06.08.10
Poland	Norland and CentaNet	Launched 07.09.10
USA	NetScout	Launched 21.09.10
Austria	A1 Telekom	Launched 05.11.10
Sweden	TeliaNor Sweden	Launched 15.11.10
Sweden	TeliaS Sweden	Launched 15.11.10
Hong Kong	CSL Limited	Launched 25.11.10
Finland	TeliaSonera	Launched 30.11.10
Germany	Vodafone	Launched 01.12.10
USA	Verizon Wireless	Launched 05.12.10
Finland	Eira	Launched 06.12.10
Denmark	TeliaSonera	Launched 09.12.10
Estonia	Elion	Launched 17.12.10
Japan	NTT Docomo	Launched 24.12.10
Germany	Deutsche Telekom	Launched 05.04.11
Philippines	Smart Communications	Launched 16.04.11
Lithuania	Omnitel	Launched 26.04.11
Singapore	NT	Launched 21.06.11
Latvia	LTU	Launched 31.06.11
South Korea	SK Telecom	Launched 01.07.11
South Korea	LG U+	Launched 01.07.11
Germany	O2 (Telefonica)	Launched 01.07.11
Canada	Rogers Wireless	Launched 07.07.11
Austria	T-Mobile	Launched 25.07.11
USA	Novac Telecom	Launched Jul 2011
Canada	Bell Mobility	Launched 14.09.11
Saudi Arabia	Noby (LTE TDD)	Launched 14.09.11
Saudi Arabia	STC (LTE TDD)	Launched 14.09.11
Saudi Arabia	Zain	Launched 14.09.11
USA	AT&T Mobility	Launched 15.09.11
UAE	Etisalat	Launched 25.09.11
Australia	Telstra	Launched 27.09.11
Denmark	TDC	Launched 28.09.11
Austria	3	Launched 18.11.11
Puerto Rico	AT&T Mobility	Launched 20.11.11
Puerto Rico	Claro	Launched 24.11.11
Kyrgyzstan	Saima Telecom	Launched 09.12.11
Brazil	Sky Brazil (LTE TDD)	Launched 13.12.11
Finland	DNA	Launched 13.12.11
Uruguay	Anel	Launched 13.12.11
USA	Leap Wireless/Cricket	Launched 21.12.11
Singapore	SingTel	Launched 22.12.11
Kuwait	Via	Launched 27.12.11
Armenia	Vivacef-MTS	Launched 25.12.11
Bahrain	Viva	Launched 01.01.12
Hungary	T-Mobile	Launched 01.01.12
South Korea	KT	Launched 03.01.12
Russia	Yota	Launched 15.01.12
Canada	Telus	Launched 10.02.12
USA	Peoples Telephone Co-op	Launched 14.02.12
Japan	Softbank Mobile (LTE TDD)	Launched 24.02.12
Portugal	TMN (Portugal Telecom)	Launched 12.03.12
Portugal	Vodafone Portugal	Launched 12.03.12
Portugal	Optimus	Launched 15.03.12
Japan	eMobile	Launched 15.03.12
USA	US Cellular	Launched 22.03.12
Croatia	T-Hrvatski Telekom	Launched 23.03.12
Croatia	VPNet	Launched 23.03.12
USA	Panhandle Telephone Co-op	Launched Mar 2012
Belarus	Yota Bel	Launched 01.04.12
India	Bharti Airtel (LTE TDD)	Launched 30.04.12
Andorra	Andorra Telecom	2012
Angola	Movitel	2012
Australia	NBN Co (LTE TDD)	2012
Australia	Optus	2012

Australia	Vivid Wireless (LTE TDD)	2012
Azerbaijan	Azercell	2012
Bahamas	BTG	2012
Belgium	Belgacom (Proximus)	2012
Belgium	Mobistar	2012
Canada	MTS Allstream	2012
Canada	Sasktel	2012
China	China Telecom	2012
Colombia	Unic-EPM	2012
Costa Rica	Claro	2012
Costa Rica	ICE	2012
Denmark	3 Denmark	2012
Denmark	TeliaNor	2012
Estonia	Eira	2012
Ghana	Glo Mobile	2012
Hong Kong	China Mobile (FDD and TDD)	2012
India	Augere (LTE TDD)	2012
India	Riance (LTE TDD)	2012
India	Qualcomm India LTE Venture	2012
Italy	3 Italia	2012
Japan	KDDI	2012
Jordan	Zain	2012
Lithuania	Bite	2012
Lithuania	Tel2	2012
Malaysia	P1 Networks (LTE TDD)	2012
Malaysia	Asiaspace (LTE TDD)	2012
Mexico	Telcel	2012
Moldova	Modcel	2012
Montenegro	Telenor	2012
Nepal	Ncell	2012
Norway	TeliaNor	2012
Paraguay	Vox	2012
Philippines	Globe	2012
Puerto Rico	Open Mobile	2012
Russia	Airtel Group	2012
Russia	Rostelecom (LTE TDD)	2012
South Africa	Vodacom	2012
Switzerland	Swisscom	2012
Russia	Yota	2012
Russia	Megafon	2012
Singapore	StarHub	2012
Slovenia	Movitel	2012
South Africa	WBC	2012
Spain	Orange	2012
Sweden	H3G	2012
Switzerland	Orange	2012
UAE	Du	2012
UK	Everything Everywhere	2012
UK	UK Broadband (3.5 GHz band)	2012
USA	Arcel	2012
USA	BayRICS	2012
USA	Bluegrass Cellular	2012
USA	C Spire Wireless	2012
USA	Cellcom	2012
USA	Cembury, Inc	2012
USA	Cross Telephone	2012
USA	NorthwestCell	2012
USA	Pioneer Cellular	2012
USA	Sprint	2012
Uzbekistan	Beeline	2012
France	Orange	2012-13
Ireland	Hutchison 3	2012-13
Switzerland	Sunrise	2012-13
Australia	BIG4	2013
China	China Mobile (LTE TDD)	2013
France	Soyuzves Telecom	2013
France	SFR	2013
Italy	Vodafone	2013

Italy	Vivid	2013
Malaysia	Digi	2013
Malaysia	Maxis	2013
Mexico	Telefonica	2013
Morocco	Morocco Telecom	2013
Nepal	Nepal Telecom (LTE TDD)	2013
Russia	MTS (LTE TDD)	2013
UK	O2	2013
USA	Clearwire	2013
USA	T-Mobile USA	2013
Bulgaria	M-Tel	2013-14
Armenia	Armenel	To be confirmed
Armenia	Orange Armenia	To be confirmed
Australia	EnergyAustralia Ausgrid	To be confirmed
Australia	VHA	To be confirmed
Austria	Orange	To be confirmed
Azerbaijan	Azerfon	To be confirmed
Azerbaijan	Bakcell	To be confirmed
Bahrain	Zain	To be confirmed
Belarus	BeST (LTE)	To be confirmed
Belize	BTI	To be confirmed
Belgium	KPN Base	To be confirmed
Brazil	Vivo (Telefonica)	To be confirmed
Canada	Videotron	To be confirmed
Chile	Enel PCS	To be confirmed
Chile	Novatel	To be confirmed
Chile	Claro	To be confirmed
China	Veitel-Aerostrom (LTE TDD)	To be confirmed
Colombia	Tigo	To be confirmed
Estonia	Tel2	To be confirmed
Finland	Elifone (LTE TDD)	To be confirmed
France	Bolloré Telecom (LTE TDD)	To be confirmed
Germany	E Plus	To be confirmed
Greece	Cosmote	To be confirmed
Hong Kong	SmartTone-Vodafone	To be confirmed
Hong Kong	Hutchison 3 (FDD and TDD)	To be confirmed
Hong Kong	PCCW	To be confirmed
Hong Kong	3T Vantel Group (LTE TDD)	To be confirmed
Hungary	Telenor Magyarország	To be confirmed
India	Ykone Digital (LTE TDD)	To be confirmed
Indonesia	Indosat	To be confirmed
Indonesia	Telkomsel	To be confirmed
Indonesia	XL Axiata	To be confirmed
Israel	Cellcom	To be confirmed
Italy	Telecom Italia	To be confirmed
Jamaica	Claro	To be confirmed
Jersey	Clear Mobile	To be confirmed
Kazakhstan	Kcell	To be confirmed
Kuwait	Zain	To be confirmed
Latvia	Bite	To be confirmed
Latvia	Tel2	To be confirmed
Lebanon	MYC Touch	To be confirmed
Libya	Al Madar	To be confirmed
Luxembourg	Orange	To be confirmed
Malaysia	U Mobile	To be confirmed
Moldova	Orange	To be confirmed
Namibia	Lea (Cell One)	To be confirmed
Namibia	MTN	To be confirmed
Netherlands	KPN	To be confirmed
Netherlands	Vodafone	To be confirmed
Netherlands	T-Mobile	To be confirmed
Netherlands	Ziggo 4	To be confirmed
Netherlands	Tel2	To be confirmed
New Zealand	Telecom NZ	To be confirmed
New Zealand	Vodafone NZ	To be confirmed
Nigeria	Obiocom	To be confirmed
Nigeria	Zoda Fones (LTE TDD)	To be confirmed
Oman	Omantel	To be confirmed
Panama	Cable and Wireless	To be confirmed
Philippines	Piltel	To be confirmed

Philippines	Sayan Telecommunications	To be confirmed
Poland	ERA/T-Mobile	To be confirmed
Poland	PTK Centertel (Orange)	To be confirmed
Qatar	Oriq	To be confirmed
Romania	Orange	To be confirmed
Romania	Vodafone	To be confirmed
Russia	Beas Telecom (LTE TDD)	To be confirmed
Russia	Smoletecom (LTE TDD)	To be confirmed
South Africa	Cell C	To be confirmed
South Africa	MTN	To be confirmed
South Africa	Ita	To be confirmed
Slovak Rep	Orange	To be confirmed
Spain	Telefonica	To be confirmed
Spain	Vodafone	To be confirmed
Spain	Yogo	To be confirmed
Sri Lanka	Dialog Axiata	To be confirmed
Sri Lanka	Mobitel	To be confirmed
Taiwan	Global Mobile (LTE TDD)	To be confirmed
Taiwan	Chunghua Telecom	To be confirmed
Tunisia	Tunisieana	To be confirmed
UK	Vodafone	To be confirmed
Uruguay	Dedicado (LTE TDD)	To be confirmed
USA	Agri-Valley Broadband	To be confirmed
USA	Appalachian Wireless	To be confirmed
USA	Alaska Communications	To be confirmed
USA	Carolina West Wireless	To be confirmed
USA	Charlton Valley Comm	To be confirmed
USA	Custer Telephone	To be confirmed
USA	Eliz Telephone Co-op	To be confirmed
USA	Commnet Wireless	To be confirmed
USA	Convergence Technologies	To be confirmed
USA	LightSquared	To be confirmed
USA	O2 Secure Wireless	To be confirmed
USA	PPF	To be confirmed
USA	Peoples Telephone Co-op	To be confirmed
USA	S and R Communications	To be confirmed
USA	SST Telephone Cooperative	To be confirmed
USA	SpeedConnect	To be confirmed
USA	Sprockel Wireless	To be confirmed
USA	State Networks	To be confirmed
USA	Texas Energy Network	To be confirmed
USA	Thumb Cellular	To be confirmed
USA	United Wireless	To be confirmed
USA	Public Service Wireless	To be confirmed
USA	City of Charlotte Council	To be confirmed
Vietnam	RusViet Telecom	To be confirmed

59 pre-commitment trials

Abkhaz	Aquafon
Angola	Unitel
Argentina	Telefonica
Argentina	Comcast Republic
Bahrain	Etisalat
Belarus	Yota
Belgium	Orange
Bolivia	Geoparc
Brazil	Claro
Brazil	SHARTS
Brazil	Falabella Slovenska
Chad	Sumtel
China	Huawei
China	Fiber (LTE TDD)
Croatia	OPC&S
South Africa	AS - TOT
Taiwan	True Move
Thailand	Ase
Thailand	Telcel
Turkey	3 UK
UK	Clear Mobile
UK	Arava
USA	MTS-Ukraine
USA	Dan Network seeking FCC approve
Vietnam	PPF Telecom
Vietnam	VOG (VNET)
Vietnam	Vatel



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LTE1800: practical activities

1 GSA report published November 2011:
Embracing the 1800MHz opportunity: Driving mobile forward with LTE in the 1800MHz band

Developed with operator support from CSL Limited, Elisa, Deutsche Telekom, Starhub, Teliasonera, Telstra plus Ericsson, Nokia Siemens Networks, Qualcomm
In English and Russian language

2 Responding to enquiries and requests from regulators, operators, vendors

LTE1800 zone

LTE in 1800 MHz spectrum

White Papers, seminar presentations, plus links to other key resources

More content added to GSA's LTE1800 Zone

4 Reporting regularly on network commitments, deployments, trials

5 LTE1800 LinkedIn discussion group has built up to over 1,200 members

6 Operator requirements, strategies (presentations) being shared via the GSA home page – Aero2, Dialog Axiata, Du, Tele2 Russia, Telstra, etc.



Использование возможностей 1800 МГц: развитие мобильной связи с применением технологии LTE в диапазоне 1800 МГц



LTE1800 gaining traction globally



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16 commercial LTE1800 networks launched

Poland	Mobyland/ CenterNet	Commercially launched
Lithuania	Omnitel	Commercially launched
Singapore	M1	LTE1800/2600 commercial service launched
Germany	DT	Commercially launched
Latvia	LMT	Commercially launched
Finland	TeliaSonera	Commercially launched
S. Arabia	Zain	Commercially launched
Australia	Telstra	Commercially launched
Denmark	Telia	Commercially launched
Finland	Elisa	LTE2600/1800 DC-HSPA+ commercial service launched
Hong Kong	CSL Limited	LTE2600/1800 DC-HSPA+ commercial service launched
Singapore	SingTel	LTE1800/2600 commercial service launched
Finland	DNA	LTE1800/2600 commercial service launched
Hungary	T Mobile	Commercially launched
Sth Korea	KT	Commercially launched
Croatia	T-Hrvatski	Commercially launched

75 LTE1800 user devices announced
50% higher than January 2012

Angola	Movicell	LTE1800 in deployment
Australia	Optus	LTE1800 in deployment for April 2012 service launch
Australia	VHA	LTE1800 in deployment
Belgium	Mobistar	LTE1800 in deployment
Belgium	Proximus	LTE1800 in deployment
Bulgaria	M-TEL	Trials
Brazil	Oi	Trials
Croatia	VIPnet	800/1800MHz consumer trial launched September 2011
Estonia	Elisa	In deployment
Estonia	EMT	In deployment
France	Bouygues	Trials
France	Orange	Trials
Georgia	Magticom	1800 MHz is an option
Germany	E Plus	Trials
Greece	Cosmote	Trialled. All incumbents acquired more 1800 MHz
Hong Kong	Smartone	LTE1800 in deployment
Indonesia	Indosat	LTE1800 trial ended October 2011. Plans commercial LTE1800 in deployment
Italy	Three	LTE1800 in deployment for use alongside LTE2600
Malaysia	Celcom	Trials – 1800 and 2600 MHz Under discussion
Namibia		
Philippines	Bayan Tel	Plans to deploy LTE1800
Russia	Tele2	Tests completed
Russia	SMARTS	Pilot trial network in Ufa
Singapore	StarHub	Targeting Q4 2012 launch
Slovenia	Mobitel	LTE to be deployed in 800, 1800,2600 MHz. LTE1800 launch target of 2012
Sth Africa	MTN	LTE1800 in deployment
Sth Korea	SK Telecom	LTE1800 in deployment
Spain	Yoigo	LTE1800 in deployment
Sri Lanka	Dialog Axiata	Seeking additional 1800MHz spectrum for LTE1800
Sweden	Tele2	LTE1800 in deployment via Net4Mobility joint venture
Sweden	TeleNor	LTE1800 in deployment via Net4Mobility joint venture
Sweden	Teliasonera	LTE1800 in deployment
Thailand	AIS/DPC- CAT	Trials
Thailand	True Move	Planning trials
Turkey	Avea	Trials
UAE	Du	LTE1800 in deployment, launch anticipated in 2012
UK	Everything Everywhere	Trialling LTE1800 Provisional approval given to deploy commercial network

Many more
LTE1800
deployments and
trials across the
world

LTE TDD is market reality



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LTE TDD: Global network commitments, trials, deployments, commercial launches

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www.linkedin.com/groups?gid=3978061

(1,000+ Members)

Global TD-LTE Initiative

The Global TD-LTE Initiative (GTI) aims to bring together leading industry partners to steer the TD-LTE ecosystem as a major standard in mobile broadband technology & drive the development of next generation mobile broadband networks.

Several network operators mentioned on this page are GTI members Website: www.lte-tdd.org

Australia	<p>WiMAX™ operator Vivid Wireless trialled LTE TDD in Sydney. Commercial launch is expected by 2012.</p> <p>NBN Co is deploying a 2.3 GHz fixed-wireless LTE TDD network to serve rural areas</p>
Brazil	<p>Sky Brazil launched a commercial LTE TDD network in December 2011</p>
Canada	<p>WiMAX™ operator Xplornet trialled LTE TDD in 2.5 GHz and 3.5 GHz spectrum</p>
China	<p>China Mobile launched large-scale LTE TDD trials to be extended in 2012 to 20,000 base sites. Commercial services expected in 2013</p>
Denmark	<p>3 acquired 2.6 GHz TDD spectrum and is deploying a combined LTE FDD/TDD network</p>
France	<p>Orange has deployed a trial LTE network in Paris supporting FDD and TDD modes. Bolloré Tel. plans to deploy 3.5 GHz LTE TDD</p>
Germany	<p>E-Plus is trialling LTE TDD in 2.6 GHz</p>
Hong Kong	<p>BWA spectrum won by China Mobile, 21 Vianet Group, and Hutchison 3 HK. China Mobile and Hutchison 3 will each deploy combined LTE FDD/TDD networks</p>
India	<ul style="list-style-type: none"> • Bharti Airtel commercially launched LTE TDD service on April 10, 2012 • RIL is deploying LTE TDD • Qualcomm India LTE Venture is committed to LTE TDD deployment. • Tikona Digital will deploy LTE TDD • Aircel is trialling LTE TDD • Augere is deploying LTE TDD • BSNL may introduce LTE TDD • MTNL may introduce LTE TDD
Ireland	<p>LTE TDD testing was completed June 2010</p>

Japan	<p>SoftBank Mobile commercially launched its XGP/LTE TDD network in February 2012</p>
Malaysia	<p>WiMAX™ operator Packet Networks (P1) is planning to deploy LTE TDD on existing sites as an overlay network.</p> <p>WiMAX™ operator Asiaspace is planning to deploy 2.3 GHz LTE TDD</p>
Nepal	<p>Nepal Tel. is deploying 2.3 GHz LTE TDD</p>
Nigeria	<p>Zoda Fones is deploying LTE TDD in 3.5 GHz</p>
Oman	<p>Omantel showcased LTE TDD and plans deployment</p>
Poland	<p>Aero2 launched LTE TDD in Band 38 (2.6 GHz), part of Aero2's dual LTE network (LTE TDD and LTE1800 FDD)</p>
Russia	<ul style="list-style-type: none"> • Rostelecom is reported to have approval to deploy LTE TDD network in 2.3 GHz spectrum • Voentelecom is trialling LTE TDD • MTS is deploying 2.6 GHz LTE TDD • Base Tel. plans LTE TDD network
Saudi Arabia	<p>Etisalat Mobily launched a commercial LTE TDD network in September 2011</p> <p>STC launched a commercial LTE TDD network in September 2011</p>
Singapore	<p>IDA plans to auction BWA spectrum suitable for LTE TDD</p>
Sweden	<p>3 Sweden is deploying a combined LTE FDD/TDD network (TDD in 2.6 GHz)</p>
Taiwan	<p>CHT has completed LTE tests on the high-speed rail system using TDD and FDD modes in 2.6GHz spectrum</p> <p>FarEasTone and China Mobile are co-operating on an LTE TDD trial in Taipei</p> <p>The National Chiao Tung University conducted a trial of LTE TDD in 2010</p> <p>WiMAX™ operator Global Mobile Corp will seek approval to switch to LTE TDD once WiMAX coverage hits 70% of the population</p> <p>Fitel (PHS, WiMAX™) trialling LTE TDD</p>
Thailand	<p>AIS – TOT joint trial in 2.3 GHz band</p>
UK	<p>UK Broadband is deploying 3.5 GHz LTE TDD</p>
Uruguay	<p>Dedicado is planning 3.5 GHz LTE TDD deployment</p>
USA	<p>Clearwire announced plans to deploy Band 41 LTE TDD overlay to existing network</p> <p>WiMAX™ operator Xplornet Communications successfully trialled LTE TDD</p>
Various	<p>US-based VelaTel Global Communications has BWA projects in various markets including in China e.g via its JV with Aerostrong</p>

6 commercial LTE TDD services launched

Source: GSA's Evolution to LTE report
April 12, 2012

LTE TDD	
2300 MHz Band 40	43 devices
2600 MHz Band 38	45 devices
2600 MHz Band 41	5 devices

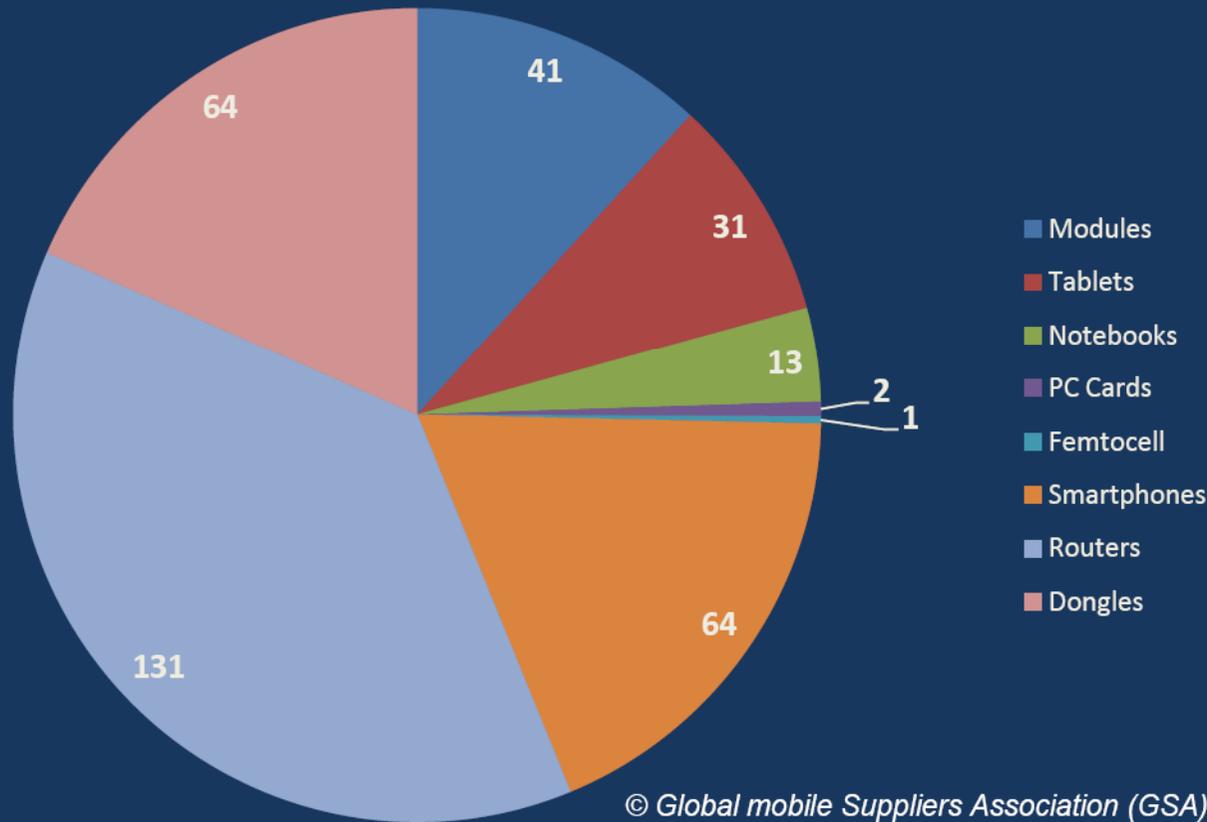
LTE TDD LinkedIn Group:
www.linkedin.com/groups?home=&gid=3978061

LTE Devices: 347 products launched



www.gsacom.com

63 manufacturers



76% increase in LTE devices announced since October 2011*

150 LTE user devices launched since October 2011*

Number of LTE smartphones grew 33% since January 2012**

LTE-enabled tablets jumped 72% since January 2012**

LTE FDD	
700 MHz	170 devices
800 MHz Band 20	72 devices
1800 MHz Band 3	75 devices
2600 MHz Band 7	94 devices
800/1800/2600 MHz	57 devices
AWS Band 4	72 devices

LTE TDD	
2300 MHz Band 40	43 devices
2600 MHz Band 38	45 devices
2600 MHz Band 41	5 devices

Source : Status of the LTE Ecosystem report
© GSA - April 3, 2012
www.gsacom.com

* As reported in Status of the LTE Ecosystem report - 28.10.11

** As reported in Status of the LTE Ecosystem report - 20.01112

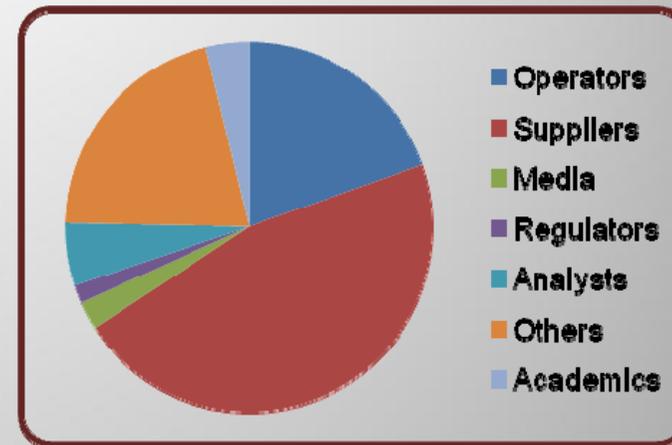
GSA website www.gsacom.com

Registered site users - categories

48,200+ registered users

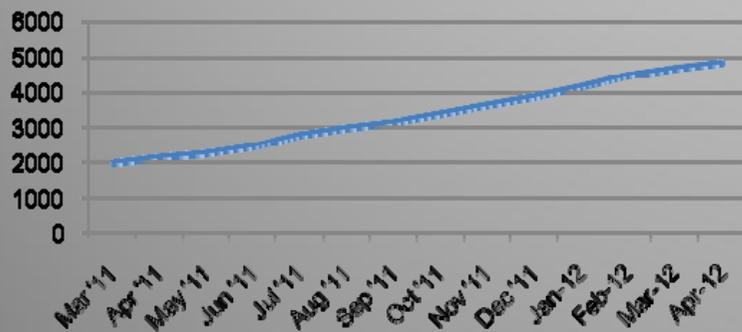
- growing ~1000 every month
- 50,000 registered users milestone will be reached in June 2012
- diverse, global audience

USA is the origin of the majority of site visitors, then UK, China, India, Japan, Taiwan, South Korea, Germany, France, Finland, Russia, Canada, Sweden, Australia, Brazil (206 countries over past year)

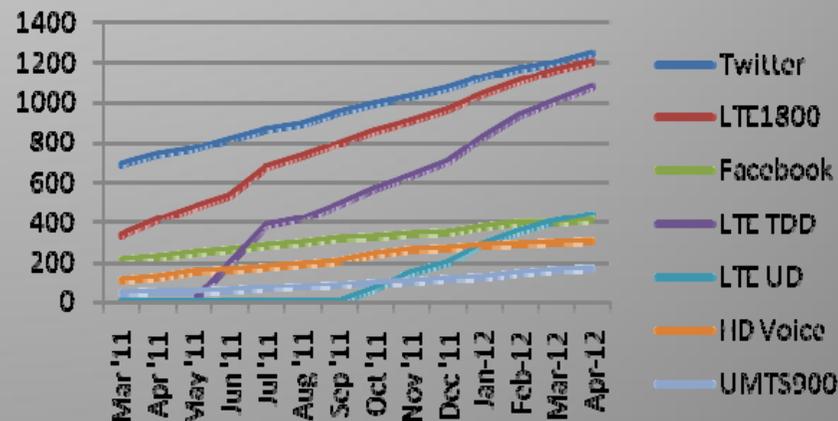


Social networks presence

GSA LinkedIN Group members growth



Twitter
Facebook
Various LinkedIn discussion subgroups



INVITATION TO 3GPP

Aim: to assist 3GPP Marcoms program, further extend awareness of 3GPP brand, work, results

GSA invites 3GPP to produce a short paper - suggested scope: 3GPP's work, milestones now achieved, successes, key drivers of standardization/future goals

- Leverage the GSA's global community/diverse audience*
- Branded 3GPP paper*
- Placed on GSA website home page with link to www.3gpp.org*

Offer renewed



Note: guest content contributors appreciate their papers/presentations to be available to the GSA website audience, as the visibility i.e. number of downloads is always many times greater than the original audience for which they were intended

GSA appreciates the opportunity to support the 3GPP seminar at ComNews LTE Russia and CIS 2012

Moscow - May 16, 2012

“The Challenges for LTE – Regional & Global”



..... and other events as appropriate

GSA Secretariat: info@gsacom.com