

Release-13 Cellular IoT Deployments – July 2019



REGION	COUNTRY	OPERATOR	NB-IoT	LTE-M
Africa			1	0
	South Africa	Vodacom	1	
Asia & Pacific			16	10
	Australia	Telstra	1	1
	Australia	Vodafone Australia	1	
	China	China Telecom	1	
	China	China Unicom	1	
	China	China Mobile	1	
	Hong Kong	China Mobile (HK)	1	
	India	Reliance Joi		
	India	Infocomm	1	
	Japan	KDDI (au)		1
	Japan	DOCOMO		1
	Malaysia	Maxis	1	
	New Zealand	Spark		1
	New Zealand	Vodafone New Zealand		
	New Zealand	Zealand	1	1
	Singapore	M1	1	
	Singapore	Singtel	1	1
	South Korea	KT Corp	1	1
	South Korea	LG Plus	1	
	South Korea	SK Telecom		1
Sri Lanka	Dialog Axiata	1	1	
Taiwan	Asia Pacific Telecom (APT)	1	1	
Taiwan	Far EasTone	1		
Eastern Europe			13	0
	Croatia	A1 Croatia	1	
	Croatia	Hrvatski Telecom	1	
	Czech Republic	Vodafone Czech Republic		
	Czech Republic	Republic	1	
	Estonia	Elisa	1	
	Estonia	Telia Estonia	1	
	Hungary	Magyar Telekom	1	
	Kazakhstan	KaR-Tel (Beeline)	1	
	Poland	Polkomtel	1	
	Poland	T-Mobile Poland	1	
	Russia	Beeline (Russia)	1	
	Russia	Movile TeleSystems (MTS)	1	
Slovakia	Slovak Telecom	1		
Ukraine	Lifecell	1		
Latin America & Caribbean			2	3
	Argentina	Movistar (Argentina)	1	1
	Brazil	Vivo	1	1
	Mexico	AT&T Mexico		1
Middle East			4	1
	United Arab Emirates	Du	1	
	United Arab Emirates	Etisalat	1	1
	Turkey	Turkcell	1	
	Turkey	Vodafone Turkey	1	
U.S. & Canada			3	4
	Canada	Bell Canada		1
	Canada	Telus		1
	United States	AT&T	1	1
	United States	T-Mobile US	1	
	United States	Verizon	1	1
Western Europe			17	6
	Austria	T-Mobile	1	
	Belgium	Orange	1	1
	Belgium	Proximus	1	
	Belgium	Telenet	1	
	Denmark	TDC	1	
	Finland	DNA		1
	France	SFR (Altice)	1	
	France	Orange France		1
	Germany	Telekom Deutschland	1	
	Germany	T-Mobile	1	
	Greece	Cosmote	1	
	Ireland	Vodafone Ireland	1	
	Italy	Telecom Italia (TIM)	1	
	Italy	Vodafone Italy		
	Netherlands	KPN		1
	Netherlands	T-Mobile	1	
	Netherlands	Vodafone/Ziggo	1	
	Norway	Telenor Norway		1
	Norway	Telia Norge	1	
Spain	Orange Espana		1	
Spain	Vodafone Spain	1		
Sweden	Telia Sweden	1		
Totals			56	24
Global Totals			68	

Cellular Internet of Things (C-IoT)

The Cellular Internet of Things is addressed in 3GPP Release 13 for enhanced Machine-Type Communications (eMTC) in a complementary suite of standards including both LTE Category M1 (LTE Cat-M1 also called LTE-M) and Narrowband IoT (NB-IoT). The new LTE-IoT architecture further reduces cost, improves range, and extends battery life of IoT devices. LTE-M and NB-IoT devices could achieve battery life as high as 10 years. LTE Category M1 User Equipment supporting the broadest range of IoT capabilities, with complexity reduction and coverage enhancements to at least 155.7 dB Maximum Coupling Loss (MCL); data rates up to 1 Mbps utilizing only 1.08 MHz bandwidth; supporting full-duplex FDD, half-duplex FDD and TDD modes, and ability for deployment in any LTE spectrum. LTE-M can also support voice (through Voice over LTE (VoLTE) and full-to-limited mobility, and is designed to fully coexist with regular LTE traffic (Cat-0 and above). LTE Cat-NB1 (NB-IoT) scales down further in cost and power for low-end IoT user cases. NB-IoT User Equipment further reduces complexity and extends coverage to 164 dB MCL. NB-IoT is ideal for low-throughput, delay-tolerant use cases with low mobility support, such as smart meters, remote sensors and smart buildings. Cat-NB1 uses 180 kHz bandwidth and supports stand-alone, guard-band and in-band operation. NB-IoT supports in-band deployment by utilizing a single RB within a normal LTE carrier. It can be deployed in a LTE carrier's guard-band utilizing unused resource blocks while still minimizing interference with neighboring carriers. In standalone mode, NB-IoT can be deployed in re-farmed spectrum from GERAN systems utilizing standalone 200 kHz carriers. Thus, NB-IoT provides flexible deployment options to operators.