



# CDMA450 Global Update

March 2011

This document provides an overview of the worldwide status of CDMA450.

The CDMA Development Group (CDG) is a trade association formed to foster the worldwide development, implementation and use of CDMA2000<sup>®</sup> and other complementary wireless solutions. Its member companies include many of the world's leading service providers and equipment manufacturers. The primary activities of the CDG include development of advanced features and services, evolution of standards, technical education, advocacy, regulatory affairs, global roaming and device availability. Currently, there are more than 500 individuals working within various CDG industry initiatives.

## Abstract

The past decade brought tremendous growth in third generation (“3G”) wireless services based on CDMA2000 technologies, with 320 operators in 121 countries/territories now offering commercial services. With advanced data and voice capabilities, flexibility and a seamless migration path, CDMA2000 has become a leading wireless technology for delivering voice and broadband data to densely populated urban areas as well as rural and remote regions in developed and developing markets. CDMA450 – or CDMA2000 in the 450 MHz frequency band – is a mature and robust technology for cost-effective provisioning of both basic and advanced voice and broadband data services across regions with low population densities or difficult terrain due to the favorable propagation characteristics of the lower frequency band combined with a robust and advanced 3G CDMA technology.

Due to an increased interest in the 450 MHz band, since CDMA450 was adopted as an IMT-2000 standard by the ITU in 2007, the number of systems continues to grow.

## CDMA450 Operator Deployment Status

	Number of CDMA450 Operators	Number of Countries
In Commercial Operation	118	62
In Trials and Deployment	17	9

## CDMA2000 Overview

CDMA2000, one of the International Telecommunication Union's (ITU) IMT-2000 (or 3G) mobile standards, currently includes two modes of operation, CDMA2000 1X and CDMA2000 1xEV-DO (Evolution-Data Optimised).

CDMA2000 1X delivers circuit-switched voice and peak data speeds of 153 kbps in mobile environments. An evolved version called *1X Advanced*, to be available in 2011, will offer software and hardware upgrades that can quadruple the capacity of existing 1X networks. This technology will significantly lower the cost per call and free-up spectrum for mobile broadband services such as EV-DO.

CDMA2000 1xEV-DO (EV-DO) technologies are optimized for mobile broadband data delivery. *EV-DO Release 0 (Rel. 0)* supports peak data rates up to 2.4 Mbps, allowing access to bandwidth-intensive applications. *EV-DO Revision A (Rev. A)* is an enhancement to Rel. 0 and delivers peak data rates up to 3.1 Mbps in the downlink and 1.8 Mbps in the uplink, with lower latencies and improved Quality of Service (QoS) to support voice over IP (VoIP).

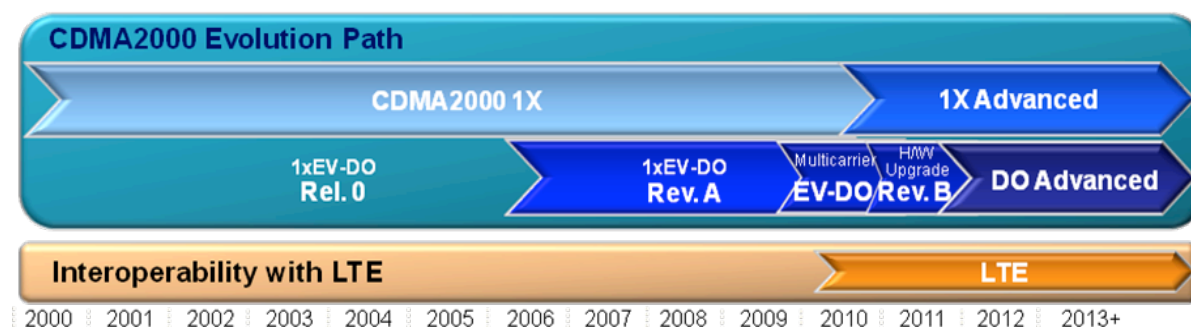
*Multicarrier EV-DO* (part of the EV-DO Rev. B standard) aggregates multiple Rev. A channels through a software upgrade, tripling the peak data rate to 9.3 Mbps in the downlink and 5.4 Mbps in the uplink, or double data network capacity. The full *EV-DO Revision B (Rev. B)* mobile broadband solution is implemented through a channel card hardware upgrade, taking peak data speeds to 14.7 Mbps in the downlink.

*DO Advanced* will incorporate smart network, device and antenna techniques across advanced topology networks to substantially increase data network capacity exactly where and when it is needed.

Each of these forward and backward compatible enhancements will be supported with VoIP and simultaneous circuit-switched voice and data services (SVDO). Seamless interoperability with LTE is also supported. These enhancements enable EV-DO networks to meet the escalating demand for data services, while preserving and maximizing the return on investment on existing capital equipment.

## CDMA2000 (CDMA450) Roadmap

High-performance and long-term evolutionary path



*“With a clear and long-term roadmap for CDMA2000, we are confident that we can sustain our leadership position in the highly competitive mobile broadband market in Scandinavia. Deploying multicarrier EV-DO in the 450 MHz band further solidifies our competitive posture with a stronger mobile broadband offering.”*

Per Borgklint, CEO  
Net1, Sweden

The CDMA2000 family of technologies provides mobile operators with the ability to offer high-quality voice and broadband data services affordably to its customers. The CDG continues to find that the introduction of CDMA2000 technologies in the marketplace results in substantial mobile service revenue growth through the delivery of innovative applications that provide users with a powerful way to access a wide variety of services and information that directly supports economic and social development.

EV-DO efficiently supports the delivery of a wide variety of broadband data applications, such as broadband Internet or VPN access and video and audio downloads, and in many countries it has been deployed as a DSL substitute. EV-DO Rev. A enhancements enable real-time broadband and delay sensitive services such as VoIP, push-to-talk (PTT), push-to-media (PTM), video conferencing and multicasting. These and other improvements that build on CDMA2000's all-IP network infrastructure enable greater flexibility and choice. They also spur the creation of innovative applications that provide an indispensable set of services to rural and remote communities.

*"For countries with vast territories, CDMA450 is an optimal technology for third (3G) and next-generation networks since it provides better coverage with significantly lower investments. China and Russia are testaments of this. The efficiency of CDMA450 in Russia is demonstrated by SkyLink whose 3G CDMA450 network generates as much data traffic volume as all of the other national 3G carriers, yet provides much better coverage of the country's territory."*

Gulnara Khasianova, General Director,  
SkyLink, Russian Federation

## **CDMA2000 Worldwide**

Since its first commercial launch – by South Korea's SK Telecom in October 2000; the first launch of an IMT-2000 technology – CDMA2000 has matured into a globally-deployed platform for the provision of 3G voice and broadband data services. CDMA2000 deployments span both urban and rural service areas in advanced mobile markets such as Europe, Japan, South Korea and North America as well as developing markets, including Africa, Brazil, China, India, Latin America and Russia.

*"Our CDMA450 network in the 410 MHz band will fill a very important role in improving the communication capabilities across Ireland. It serves as a resilient multiservice network with nationwide coverage to serve many critical voice, PTT, and broadband data applications. We consider CDMA2000 as being the best technology thanks to its reliability, versatility, global footprint and, of course, resource efficiency when used in the 410/450 MHz bands. Although being a rather small island nation, Ireland suffers from high mobile tariffs and rather poor fixed and broadband communications infrastructure. Many solutions have been tried to meet these critical needs, but we feel that a highly efficient solution like our CDMA450 service stands out as the only realistic option to make a substantial positive difference in Ireland, particularly in the current financial downturn."*

Johan Jobér, Director  
Wirefree Communications Limited, Ireland

More than 320 operators in 121 countries/territories have deployed CDMA2000 technologies, serving over 561 million people. Nearly 60 percent (or 187) of CDMA2000 operators offer or are deploying EV-DO broadband services, and 149 have already or are in the process of migrating to Rev. A advanced broadband. The first Multicarrier EV-DO network was commercially deployed in Indonesia at the beginning of 2010, and another 15 operators have deployed or are planning to deploy the technology. With more than 156 million subscribers across all continents, EV-DO is one of the most widely used mobile broadband technologies. The strong CDMA2000 ecosystem includes 20 infrastructure and test equipment providers and 136 vendors offering over 2,540 models of handset and PC card devices.

*“The rapid adoption of CDMA2000 is a direct result of its superior economic and technical performance. Combining this state-of-the-art technology with the favourable propagation characteristics of 450 MHz creates a powerful telecommunications service offering.”*

Rima Qureshi, Senior Vice President  
Head of CDMA Business Unit Mobile Systems,  
Ericsson

## **Update on CDMA450**

In 2003, the ITU invited the ITU-R to further study the bands below 806 MHz, recognizing the need for cost-effective implementation of IMT-2000 and systems beyond IMT-2000 (now known as IMT-Advanced). In addition, the ITU has stated that geographical coverage for terrestrial IMT-2000 systems could be increased by using frequency ranges lower than 806/862 MHz. As a result, the ITU-R World Radiocommunication Conference 2007 (WRC 2007) identified the 450-470 MHz frequency bands for International Mobile Telecommunications (IMT) services on a global basis.

There is increasing interest globally in the deployment of fixed and mobile services in the 450 MHz band, with many countries already offering mobile and fixed services in the band, and a number of regulators in several countries have carried out consultations regarding their plans for the use of the 450 MHz band for IMT services.

In Region 2, CITEL’s PCC II approved Recommendation 10 (V-05) for the “USE OF THE 410-430 MHz AND 450-470 MHz BANDS FOR FIXED AND MOBILE SERVICES FOR DIGITAL COMMUNICATION PARTICULARLY IN LOW POPULATION DENSITY AREAS” which recommends that in those countries where there is a need for the provision of services in low population density areas, the administrations consider the use of the 410-430 MHz and/or 450-470 MHz bands taking into account their regulatory processes. As a result, a number of Administrations across the globe are moving forward with the use of the 450 MHz.

*“CDMA450 is the most efficient and economical solution for improving the teledensity and Internet penetration throughout the Caribbean and Latin America. We are very pleased with our ability to reach the thousands of citizens who live in the marginalized and hard to reach communities of Ecuador and satisfy their demand for telecommunication services.”*

Manuel Lopez,  
Manager, Telecommunication Project Control  
ETAPA, Ecuador

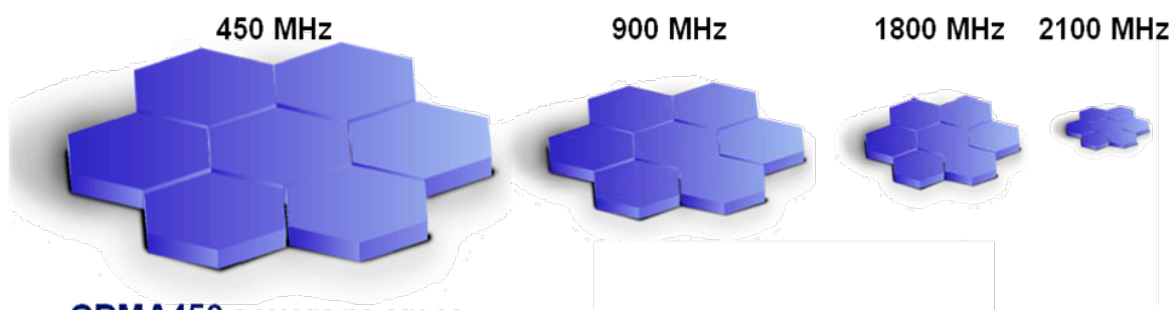
One of the primary reasons that there was such interest in identifying the 450-470 MHz band for IMT-2000 at WRC-07 is that it is well-suited for providing telecommunications coverage, both voice and broadband, over large areas with a minimal number of base stations. This, in turn, reduces capital expenditures and enables cost-effective delivery of services, particularly to rural or underserved areas, but also in urban settings. Due to the propagation characteristics of the 450-470 MHz band, base stations can achieve greater coverage areas, leading to fewer base stations needed to cover a given area. The larger cell radii can allow implementation of systems that can help meet universal service or universal access goals. The 450-470 MHz band can accommodate cellular broadband services providing high-speed data, IP-packet and video.

*“As one of the largest PSTN operators in Romania, CDMA 450 has enabled us to extend our traditional business and reach new customers faster and more cost effectively. Our CDMA2000 1X voice and EV-DO Rev. A broadband data WLL service is perfect for fulfilling the demand for affordable telecommunications in the rural areas. The evolution of this standard, which includes EV-DO Rev. B, 1X Advanced and DO Advanced, will provide our valued customers higher speeds, improved capacity and even larger coverage.”*

Viorel Ublea  
CDMA Director  
Romtelecom SA, Romania

## CDMA450 Coverage

Fewer base stations, less maintenance, lower capital and operating costs



### CDMA450 coverage area:

3x larger than in 900 MHz

12x larger than in 1800 MHz & 2100 MHz

... and with excellent signal-to-noise ratio

This is why the Brazilian regulatory agency ANATEL issued a regulation in December 2010 to clear and allocate the 450-470 MHz band to deliver the full range of IMT-2000 services throughout Brazil.

*"Allocating the 450 MHz frequency band in Brazil is essential to advancing the social and economic interests of the country. By offering affordable telephony and broadband Internet services, the citizens and public institutions of this nation will be able to fully leverage the enormous advantages of the digital revolution. Universal digital connectivity will significantly improve the lives of many people in the urban, rural and remote areas of the country by providing them better education, health care and jobs."*

Átila Augusto Souto  
 Director of Universal Telecommunication Services  
 Brazilian Ministry of Communications

CDMA2000 is a mature and widely deployed solution for economically providing mobile and fixed telecommunications services to both urban and underserved rural markets using the 450 MHz band. CDMA450 1X and EV-DO systems deliver carrier-grade telephony, mobile broadband and DSL replacement, multimedia access, location-based services, distance learning and remote medicine. CDMA450 based on EV-DO Rev. A also supports a broad selection of advanced services, including VoIP, push-to-talk, video telephony, first-responder and emergency services, broadcast and multicasting.

### **CDMA450 Operator Network Status**

Most CDMA450 operators will offer wireless broadband services

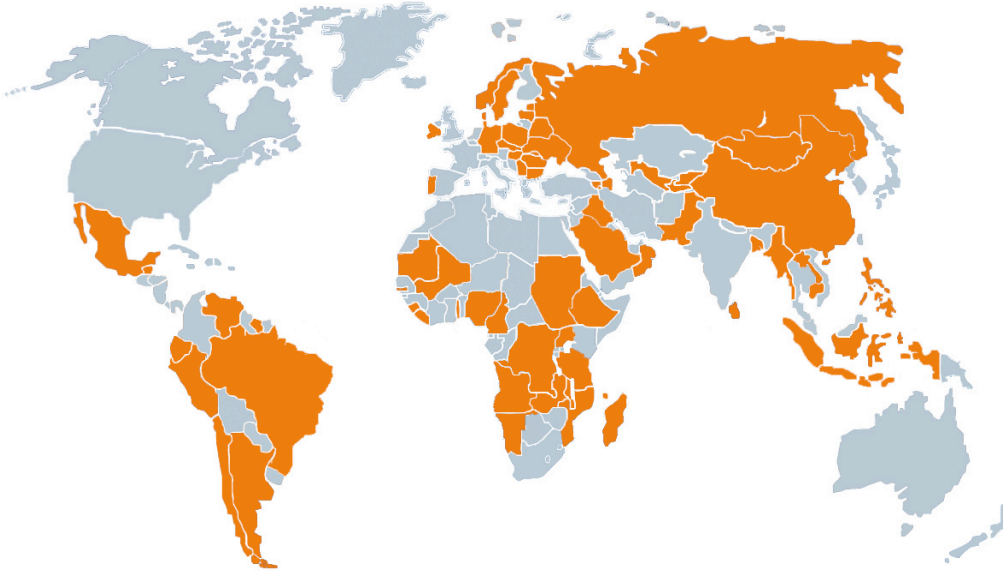
	Operators in Commercial Operation	Operators in Deployment
CDMA2000 1X	109	16
EV-DO Rel. 0	50	14
EV-DO Rev. A	32	19
EV-DO Rev. B	-	4

Up to 118 operators in 62 countries worldwide currently offer CDMA450 services, including 109 offering CDMA2000 1X, 50 EV-DO Rel. 0 and 32 EV-DO Rev. A.

There are 159 CDMA450 devices available, including 106 CDMA2000 1X, 20 EV-DO Rel. 0 and 32 Rev. A devices. More information on CDMA450 deployments and device availability is included in Appendices A and B.

## CDMA450 Global Presence

More than **130** operators in over **70** countries have deployed or are planning to deploy CDMA450



### Summary

Identification of the 450-470 MHz band for IMT-2000 services has accelerated the assignment of this frequency band around the world, which in turn, has contributed to further economies of scale for CDMA450 infrastructure and devices. CDMA450 networks are enabling instant and affordable access to people, information, personal resources and media in urban and rural areas. CDMA450 is a proven telecommunications solution that is economically bridging the digital divide throughout the entire world.

*“CDMA450 has enabled us to provide voice and data services to the more vulnerable population, contributing to reduce the digital divide. It has created business opportunities enhanced productivity and improved the lifestyles of thousands of customers. CDMA450 is a versatile, mature and mainstream solution that should be deployed in every nation.”*

Marco Antonio Galván Jimenez  
VP of Innovation and Strategy  
TELMEX

For more information about CDMA450, please visit [www.cdg.org](http://www.cdg.org).

To join the CDMA Development Group’s CDMA450 special interest group (SIG), please visit <http://www.cdg.org/about/initiatives/cdma450sig.asp>.

## Appendix A CDMA450 Market Facts

CDMA450 Deployments						
	Asia Pacific	North America	Caribbean & Latin America	Europe & Russia	Africa & Middle East	Worldwide
<b>Operators</b>	29	0	15	53	21	<b>118</b>
<b>Countries</b>	19	0	8	16	19	<b>62</b>
<b>CDMA2000 1X Commercial Networks</b>	29	0	15	44	21	<b>109</b>
<b>1xEV-DO Rel. 0 Commercial Networks</b>	6	0	1	37	6	<b>50</b>
<b>1xEV-DO Rev. A Commercial Networks</b>	4	0	1	24	3	<b>32</b>
<b>CDMA20000 1X Deployments (in progress)</b>	2	0	7	5	2	<b>16</b>
<b>1xEV-DO Rel. 0 Deployments (in progress)</b>	5	0	1	2	6	<b>14</b>
<b>1xEV-DO Rev. A Deployments (in progress)</b>	3	0	6	5	5	<b>19</b>
<b>EV-DO Rev. B Deployments (in progress)</b>	0	0	0	4	0	<b>4</b>
<b>CDMA2000 1X Trials</b>	0	0	0	2	0	<b>2</b>
<b>1xEV-DO Rel. 0 Trials</b>	0	0	0	0	0	<b>0</b>
<b>1xEV-DO Rev. A Trials</b>	0	0	0	2	0	<b>2</b>

CDMA450 Devices	
<b>CDMA2000 1X *</b>	106
<b>1xEV-DO Rel. 0</b>	20
<b>1xEV-DO Rev. A *</b>	32
<b>CDMA450/GSM Multimode **</b>	10
<b>Totals</b>	<b>159</b>

Notes: \* Including 450/800 MHz, 450/1900 MHz and 450/800/1900 MHz multiband devices

\*\* Including CDMA450/GSM, CDMA450/GSM/GPRS and CDMA450/GPRS/HSPA multimode devices

**Appendix B**  
**CDMA450 Operator Status Worldwide**  
Expanding universal services across the globe

	<b>Country</b>	<b>Operator</b>	<b>Status</b>
1	Angola	Angola Telecom	1X (Commercial) EV-DO Rev. A (In deployment)
2	Argentina	Alvis	1X (Commercial)
3	Argentina	Bantel	1X (In deployment)
4	Argentina	Cooperativa Telefónica de Calefate (Cotelcal)	1X (Commercial) EV-DO Rel. 0 (Commercial)
5	Argentina	Cooperativa Telefónica de Centenario (CTC)	1X (Commercial)
6	Argentina	Cooperativa Telefónica de Lopez Camelo (CoTelCam)	1X (In deployment)
7	Argentina	Cooperativa Telefónica de Merlo	1X (Commercial)
8	Argentina	Cooperativa Telefónica de Villa Gesell (COTEL)	1X (Commercial)
9	Argentina	Infracom	1X (In deployment)
	Argentina	TCT (Cooperativa Caleta Oliva)	1X (In deployment)
10	Armenia	Armentel	1X (Commercial)
11	Azerbaijan	Aztrank	1X (Commercial) EV-DO Rel. 0 (In deployment)
12	Bangladesh	National TeleCom (NTC)	1X (In deployment) 450/1900 MHz EV-DO Rel. 0 (In deployment)
13	Bangladesh	Peoples Telecommunication & Information Services	1X (Commercial) EV-DO Rel. 0 (In deployment)
14	Belarus	Belcel JV	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
15	Belize	Belize Telemedia Ltd. (BTL)	1X (Commercial) EV-DO Rev. A (Commercial)
16	Brazil	Unicel	1X (In deployment)
17	Bulgaria	Bulgarian Telecommunications Company (BTC)	1X (In deployment)
18	Cameroon	Cameroon Telecom (CAMTEL)	1X (Commercial) 450/800 MHz
19	Cambodia	Mfone Company	1X (Commercial)
20	Chile	Mobilink	1X (Commercial)
21	China	China Telecom	1X (Commercial) 450/800 MHz
22	Comoros	Comoros Tel	1X (Commercial)
23	Czech Rep.	Mobilkom A.S.	1X (Commercial) EV-DO Rev. A (Commercial)
24	Czech Rep.	Telefónica O2 Czech Republic	EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
25	Dem. Rep. of Congo	Tatem Telecom	1X (In deployment) EV-DO Rev. A (In deployment)
26	Denmark	Net 1 Denmark	1X (In deployment) EV-DO Rev. A (Commercial)
27	Ecuador	Corporación Nacional de Telecomunicaciones (CNT)	1X (Commercial) EV-DO Rev. A (In deployment)
28	Ecuador	Etapa Cuenca	1X (Commercial)

			EV-DO Rev. A (In deployment)
29	Estonia	Televork	EV-DO Rev. A (Commercial)
30	Ethiopia	Ethiopia Telecommunications Corporation (ETC)	1X (Commercial) 450/800 MHz
31	Gambia	Gambia Telecommunications Company	1X (Commercial) 450/800 MHz EV-DO Rel. 0 (Commercial)
32	Georgia	Iberiatel	1X (Commercial)
33	Georgia	Magitron	1X (Commercial) EV-DO Rev. A (Commercial)
34	Georgia	United Telecom of Georgia (UTG)	1X (Commercial)
35	Germany	NetCologne	EV-DO Rel. 0 (Commercial)
36	Hungary	Mobile Wireless Broadband Hungary (MWBH)	EV-DO Rev. A (Commercial)
37	Iceland	Wirefree Communications Limited	1X (Trial) EV-DO Rev. A (Trial)
38	Indonesia	PT Sampoerna Telekomunikasi Indonesia (STI)	1X (Commercial) EV-DO Rev. A (Commercial)
39	Iraq	Ariafon	1X (Commercial) EV-DO Rev. A (Commercial)
40	Iraq	Moutiny Wireless Telecommunications	1X (Commercial) 450/800 MHz
41	Ireland	Nordisk Mobiltelefon Ireland	1X (In deployment) EV-DO Rev. A (In deployment)
42	Kazakhstan	JCS Kazakhtelecom	1X (Commercial)
43	Kyrgyzstan	Global Telecom	1X (In deployment)
44	Kyrgyzstan	Kyrgyz Telecom	1X (Commercial) EV-DO Rel. 0 (Commercial)
45	Kyrgyzstan	WinLine	1X (Commercial)
46	Laos	Lao Telecommunications	1X (Commercial) EV-DO Rel. 0 (In deployment)
47	Latvia	Telekom Baltija	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
48	Madagascar	Telecom Malagasy (Telma)	1X (Commercial) EV-DO Rel. 0 (In deployment)
49	Malawi	Malawi Telecommunications Ltd. (MTL)	1X (Commercial) EV-DO Rel. 0 (Commercial)
50	Malaysia	Telekom Malaysia	1X (Commercial) 450/800 MHz EV-DO Rel. 0 (Commercial)
51	Mali	Sotelma	1X (Commercial) EV-DO Rel. 0 (Commercial)
52	Mauritania	Mauritel	1X (Commercial)
53	Mexico	TELMEX	1X (Commercial)
54	Moldova	Interdnestrcom	1X (Commercial) 450/800 MHz EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
55	Moldova	Moldtelecom	1X (Commercial) EV-DO Rel. 0 (Commercial)
56	Mongolia	G-Mobile	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (In deployment)
57	Mozambique	Telecomunicações de Mozambique	1X (Commercial)
58	Myanmar	Myanmar Post and Telecommunications (MPT)	1X (Commercial) 450/800 MHz

59	Namibia	Telecom Namibia	1X (Commercial) 450/800 MHz EV-DO Rel. 0 (Commercial)
60	Netherlands	KPN	1X (Trial) EV-DO Rev. A (Trial)
61	Nigeria	GiCell Wireless	1X (In deployment) EV-DO Rel. 0 (In deployment)
62	Norway	Net 1 Norway	1X (In deployment) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
63	Oman	Oman Telecommunications Company	1X (In deployment) EV-DO Rel. 0 (In deployment)
64	Pakistan	Great International Services (Dialog)	1X (Commercial) EV-DO Rev. A (In deployment)
65	Pakistan	Pakistan Telecommunication Company Ltd. (PTCL)	1X (Commercial) 450/1900 MHz
66	Pakistan	TeleCard	1X (Commercial) 450/1900 MHz
67	Pakistan	Worldcall	1X (Commercial) 450/1900 MHz EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
68	Peru	Rural Telecom	1X (In deployment) EV-DO Rev. A (In deployment)
69	Peru	Telefónica de Peru	1X (Commercial) EV-DO Rev. A (In deployment)
70	Peru	TELMEX Peru	1X (Commercial)
71	Peru	Valtron	1X (Commercial)
72	Philippines	Broadband Everywhere	EV-DO Rel. 0 (In deployment) EV-DO Rev. A (In deployment)
73	Philippines	Globe Telecom	1X (Commercial) EV-DO Rel. 0 (Commercial)
74	Poland	Polkomtel	1X (In deployment) EV-DO Rev. A (In deployment)
75	Poland	Telekomunikacja Polska	EV-DO Rev. A (Commercial)
76	Portugal	Zapp.pt	1X (Commercial) EV-DO Rel. 0 (Commercial)
77	Romania	Cosmote	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
78	Romania	Romtelecom	1X (Commercial) EV-DO Rev. A (Commercial)
79	Russia	Apex (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
80	Russia	Baykalwestcom (Wellcom)	1X (Commercial) EV-DO Rel. 0 (Commercial)
81	Russia	Cellular Communication Alanya (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
82	Russia	Cellular Communication Chernozemye (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
83	Russia	Cellular Communication Bashkortostan (Sotel) (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)

84	Russia	Delta Telecom (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial) EV-DO Rev. B (In deployment)
85	Russia	EniseyTelecom (ETK) (Wellcom)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
86	Russia	Kaliningrad Cellular Network (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (In deployment)
87	Russia	Kaluga Cellular Communications (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (In deployment)
88	Russia	Khabarovskiy Cellular Phone (SkyLink)	1X (Commercial) EV-DO Rev. A (Commercial)
89	Russia	Krasnodar Cellular Communications (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. B (In deployment)
90	Russia	Kuzbass Cellular Communications (KCC) (SkyLink)	1X (Commercial) EV-DO Rev. A (Commercial)
91	Russia	Moscow Cellular Communications (MCC) (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial) EV-DO Rev. B (In deployment)
92	Russia	Nechernozemya Cellular Communications (SkyLink)	1X (Commercial)
93	Russia	Novosibirskiy Cellular Communications (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
94	Russia	OJSC Center Telecom	1X (Commercial) EV-DO Rel. 0 (In deployment)
95	Russia	Omskay Cellular Communications (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
96	Russia	Regional Technical Center (I-Tell)	1X (Commercial) EV-DO Rel. 0 (In deployment)
97	Russia	Rostov Cellular Telephone (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
98	Russia	Ryazan Cellular Communications (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
99	Russia	Saratovskaya System of Cellular Communications (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (In deployment)
100	Russia	SibirTelecom (Wellcom)	1X (Commercial) EV-DO Rel. 0 (Commercial)
101	Russia	SOTEL-Nizhny Novgorod (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
102	Russia	Tele-Nord JSC (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
103	Russia	Tver Cellular Communications (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
104	Russia	Udmurt Cellular Network (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)

105	Russia	Ulyanovskay Cellular Communications (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
106	Russia	Uralsvyazinform	1X (Commercial)
107	Russia	UralWestcom (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
108	Russia	Vlad Telecom (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
109	Russia	Volga Telecom	1X (Commercial)
110	Russia	Volgograd Cellular Communications (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
111	Russia	Vyatskaya Cellular Network (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
112	Russia	Yuzhno-Siberskaya Cellular Network (SkyLink)	1X (Commercial) EV-DO Rel. 0 (Commercial)
113	Saudi Arabia	Saudi Telecom Company	1X (Commercial) EV-DO Rel. 0 (In deployment) EV-DO Rev. A (In deployment)
114	Serbia	Orion Telekom	EV-DO Rev. A (Commercial)
115	Sri Lanka	Dialog	1X (Commercial)
116	Sri Lanka	Tritel Services Private Limited	1X (Commercial)
117	Sudan	Canar Telecom	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial)
118	Suriname	Telesur	1X (Commercial) EV-DO Rev. A (In deployment)
119	Sweden	Net 1 Sweden	1X (Commercial) EV-DO Rel. 0 (Commercial) EV-DO Rev. A (Commercial) EV-DO Rev. B (In deployment)
120	Tajikistan	M.TEKO	1X (Commercial)
121	Tajikistan	Tajiktelecom	1X (Commercial)
122	Tajikistan	SkyTel Tajikistan	1X (Commercial)
123	Tanzania	Benson Informatics Limited	1X (Commercial) EV-DO Rev. A (In deployment)
124	Tanzania	Tanzania Telecommunications Company Ltd. (TTCL)	1X (Commercial)
125	Togo	Togo Telecom	1X (Commercial) EV-DO Rev. A (In deployment)
126	Uganda	Uganda Telecom	1X (Commercial) EV-DO Rel. 0 (In deployment)
127	Ukraine	Ukraine Mobile Communications (UMC)	1X (In deployment) EV-DO Rev. A (Commercial)
128	Uzbekistan	Uzbektelecom	1X (Commercial) EV-DO Rev. A (Commercial)
129	Uzbekistan	Telekom Mobile	1X (Commercial)
130	Venezuela	CANTV – Movilnet (Merged with CVG Telecom)	1X (Commercial)
131	Vietnam	EVN Telecom	1X (Commercial) EV-DO Rel. 0 (Commercial)
132	Zambia	Zambia Telecom (ZAMTEL)	1X (Commercial) EV-DO Rel. 0 (In deployment)

133	Zimbabwe	TelOne	1X (Commercial)
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