



December 27, 2006

Office of the Telecommunications Authority
29/F Wu Chung House
213 Queen's Road East
Wanchai, Hong Kong

Attention: TE(R21)

The CDMA Development Group (CDG) appreciates this opportunity to provide comments to the Office of the Telecommunications Authority with regard to the October 27, 2006, consultation paper entitled *Licensing of Spectrum in the 850 MHz Band to Enable the Provision of CDMA2000 Service*. The CDG and its members have a keen interest in the Telecommunications Authority's (TA) proceeding, as the actions taken based on this consultation will clearly affect the ongoing deployment of CDMA in Hong Kong.

The CDG is an international industry association of over 120 companies, including the world's leading operators and manufacturers of digital cellular, personal communications services (PCS) and third-generation systems based on Code Division Multiple Access (CDMA) technology.¹ The CDG's mission is to lead the rapid evolution and deployment of CDMA-based systems, based on open standards and encompassing all core architectures, to meet the needs of markets around the world. The CDG advocates a progressive, spectrum-neutral approach to regulating the wireless communications market which will ensure that CDMA is allowed to co-exist and compete on a consistent basis with other wireless standards. A transparent and non-discriminatory spectrum approach for mobile operators provides certainty for investors and enables market players to establish robust business cases.

CDMA (cdmaOne™ and CDMA2000®) is one of the fastest growing technologies worldwide with over 353 million subscribers across all continents. The CDMA technology platform provides mobile operators with the ability to offer high-quality voice and data

¹ CDMA is a digital air interface for mobile communications networks that builds on the concept of employing a unique code to distinguish each call, enabling the most efficient use of a given spectrum range, and providing greater capacity relative to other commercially available mobile technologies. CDMA is a spread spectrum technology that allows many users to occupy the same time and frequency allocations in a given band. It is the basis of several International Telecommunication Union standards for third generation networks, i.e., CDMA2000, WCDMA/UMTS, and TD-SCDMA.



services to its public and private customers. The CDG continues to find that the introduction of CDMA technology in the marketplace results in mobile service growth and application development, and provides users with a powerful way to access information that supports economic and social development.

There has been tremendous growth in the last six years in third generation (“3G”) wireless services based on CDMA2000, one of the International Telecommunication Union’s (ITU) IMT-2000 (or 3G) mobile standards. Today, there are 185 CDMA2000 operators in 80 countries worldwide. CDMA2000 currently includes two modes of operation, CDMA2000 1X and CDMA2000 1xEV-DO (Evolution-Data Optimised). Both technologies offer broadband performance over cellular networks. When compared to other wireless technologies, CDMA2000 offers more efficient use of bandwidth, a superior cell radius, clear and seamless migration paths, and overall cost efficiencies for both the subscriber and the operator. CDMA2000 1X delivers peak data speeds of 153 kbps in mobile environments, while CDMA2000 1xEV-DO Release 0 (Rel 0) increases the data rate to a peak of 2.4 Mbps, allowing access to more bandwidth-intensive applications. CDMA2000 1xEV-DO Rev A, now commercially available, is an enhanced version of CDMA2000 1xEV-DO Rel 0 and it increases data rates in the forward link to 3.1 Mbps and 1.8 Mbps in reverse link. This significantly reduces latency and provides for quality of service differentials making possible new services, including VoIP and Instant Multimedia Messaging (IMM) as well as integrated voice, data and video services across multiple networks. CDMA2000 1xEV-DO Rev B, which will be available in 2008, will allow operators to aggregate up to fifteen 1.25 MHz carriers to increase data throughput to up to 73.5 Mbps in downlink and 27 Mbps on the uplink as well as to improve network capacity and network efficiencies.

The next-generation 3GPP2 standard, Ultra Mobile Broadband (UMB), formerly known as EV-DO Rev C, is a breakthrough technology which will support the ITU’s vision for next generation services. It combines the best aspects of CDMA, TDM, LS-OFDM, OFDM, and OFDMA into a single air interface and incorporates advanced antenna techniques such as MIMO and SDMA. UMB will offer up to 280 Mbps peak on the forward link and up to 68 Mbps peak on the reverse link and very low latencies, and will support flexible spectrum allocation for up to 20 MHz carrier bandwidths in 1.25 MHz blocks.

The CDG recognizes the importance of Hong Kong as both a regional hub for telecommunications and an economic bridge for all of Asia, and we commend the TA on its effort to allow the introduction of CDMA2000 technology into Hong Kong’s mobile market, and to ensure continuity of service for existing CDMA users. The CDG believes the TA’s proposal will allow the competitive provision of CDMA2000 services in Hong Kong.



The CDG supports this consultative process and we provide the following specific comments related to the individual proposals within the consultation document.

Proposal 1

The CDG strongly supports the TA's proposal to make spectrum available that would enable the provision of CDMA2000 service in Hong Kong after November 20, 2008. The improvements that build on the CDMA2000 1xEV-DO all-IP network structure will lead to greater choice of access and distribution technologies, and could spur more innovative applications for Hong Kong's users.

As noted in ¶48 of the consultation document, Hong Kong already boasts five mobile operators and a very competitive mobile market. As the licence for the existing ANSI-95 (formerly known as IS-95) operator expires, the CDG believes that the licensing of a CDMA2000 operator will not only maintain the existing level of competition, but will further intensify competition through the introduction of a second IMT-2000 technology in the Hong Kong market. In particular, a new CDMA2000 operator can further differentiate itself and intensify competition through provision of potentially different service offerings than those available from the incumbents. In addition to fostering further competition in the mobile market, the introduction of CDMA2000 1xEV-DO technologies increases the potential for competition with current providers of wired broadband services.

Moreover, the CDG believes that the presence of a CDMA2000 operator in Hong Kong is important in terms of providing roaming access for visitors to Hong Kong. As noted above, there are approximately 353 million CDMA subscribers around the world, with significant concentrations in the Asia-Pacific region, including China, Japan, India, and Korea. The CDG agrees with the TA's belief, expressed in ¶17, that CDMA service should continue to be available to visitors to Hong Kong, supporting Hong Kong's status as a great world city and a telecommunications hub in the Asia-Pacific region, as well as the gateway to mainland China. A robust CDMA2000 operator will be able to provide roaming service to visitors with CDMA2000 terminals, as well as backward compatibility to roamers with ANSI-95 terminals.

Proposal 2

The CDG agrees with the TA's proposal to use an auction to assign the newly released spectrum. With appropriate parameters in place, auctions provide an efficient and transparent means for assignment of spectrum. In addition, auctions allow market forces to determine the appropriate value of the available spectrum, ensuring that it will be assigned to the bidder that places the highest value on the spectrum.



Proposal 3

The CDG supports the band plan proposed by the TA, to make the 825-835 MHz/870-880 MHz band available for a CDMA2000 network. This band is a subset of a larger band (824-849 MHz/869-894 MHz) that is among the most widely used bands for mobile technologies and is available in the United States, Canada, Latin America and the Caribbean, Korea, China, Taiwan, and parts of the Middle East, Africa and Central Asia. It should also be noted that Japan is undergoing the spectrum reallocation process and is expected to align its allocation with the proposed band plan by 2012. As noted in our comments on Proposal 1, the provision of service to visitors carrying CDMA2000 terminals is important to maintaining Hong Kong's position as a telecommunications hub.

Proposal 6

The CDG supports the TA's preliminary view that incumbent 2G and 3G operators and their affiliates should be permitted to bid for spectrum in the 850 MHz band as long as they meet the prequalification requirements. With fair prequalification criteria in place, the CDG believes that, particularly in a competitive market such as Hong Kong, spectrum auctions should be open to the widest possible number of potential bidders.

The CDG believes that the network and service coverage obligations proposed in ¶¶63-65 will provide an adequate incentive to the winning bidder to deploy a CDMA2000 network within a reasonable timeframe, thereby ensuring service continuity for inbound roamers and interested existing ANSI-95 subscribers. The network and service coverage obligations will also serve to avoid spectrum hoarding, ensuring that the 850 MHz spectrum is put to the most efficient possible use.

Proposal 8

The CDG supports the proposed licence conditions, including the network and service coverage obligations referenced in our comments on Proposal 6. We believe that the TA has proposed conditions that will ensure the rapid rollout and successful delivery of high-quality service across Hong Kong. As the new CDMA2000 network will be deployed specifically to replace the existing ANSI-95 network, there is no potential roaming partner within Hong Kong.

The CDG appreciates this opportunity to comment on TA's consultation. We look forward to participating in this process. The CDG would be pleased to meet with OFTA



officials to discuss our positions further and provide additional information that the TA may request in support of its inquiry.

Sincerely,

CDMA Development Group

A handwritten signature in black ink, appearing to read "Perry LaForge", with a long horizontal stroke extending to the right.

Perry LaForge
Executive Director