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**EDGE, HSPA AND LTE CONTINUE TO LEAD AND
INNOVATE MOBILE BROADBAND WHITE PAPER**

(Item on the Agenda: 4.2)

(Information document submitted by 3G Americas LLC (U.S.A.))

Introduction

3G Americas LLC is a wireless industry organization dedicated to the seamless deployment and promotion of the GSM-based evolution to UMTS /HSPA and beyond including LTE in the Americas. Its Board members include AT&T (USA), Alcatel-Lucent, Cable and Wireless (West Indies), Ericsson, Gemalto, Huawei, HP, Motorola, Nokia, Nortel Networks, Openwave Systems, Rogers Wireless (Canada), Research In Motion (RIM), T-Mobile, Telcel Radiomóvil (Mexico), Telefonica and Texas Instruments.

Background

3G Americas would like to share with CITEL administrations and associate members the latest white paper published in September 2008 by Rysavy' Research for 3G Americas titled "**EDGE, HSPA and LTE Continue to Lead and Innovate Mobile Broadband**". 3G Americas make available for CITEL the white paper version in PDF format and a high level power point presentation describing the highlights and main findings of the white paper.

Highlights

EDGE, HSPA and LTE Broadband Innovation discusses the significant evolution of these 3GPP technologies, their capabilities and their positions relative to other primary competing technologies. Rysavy continued, "Because of the practical benefits and deployment momentum, the migration path from EDGE to HSPA then to LTE is inevitable. Benefits include the ability to roam globally, huge economies of scale, widespread acceptance by operators, complementary services such as messaging and multimedia and an astonishing variety of competitive handsets and other devices.

Some key observations and conclusions highlighted in the *EDGE, HSPA and LTE Broadband Innovation* white paper include:

- ❑ GSM/UMTS has an overwhelming global position in terms of subscribers, deployment, and services. Its success will marginalize other wide-area wireless technologies.

- ❑ In current deployments, HSPA users regularly experience throughput rates well in excess of 1 megabit per second (Mbps), under favourable conditions, on both downlinks and uplinks. Planned enhancements will increase these peak user-achievable throughput rates, with 4 Mbps on commercial networks being commonly measured.
- ❑ HSPA Evolution (HSPA+) provides a strategic performance roadmap advantage for incumbent GSM/UMTS operators. HSPA+ with 2x2 MIMO, successive interference cancellation, and 64 QAM is more spectrally efficient than competing technologies including WiMAX Wave 2 with 2x2 MIMO and EV-DO Rev B.
- ❑ The LTE RAN technical specification was approved in January 2008 and is being incorporated into 3GPP Release 8, which is close to completion. Initial deployments are likely to occur around 2010. The 3GPP OFDMA approach used in LTE matches or exceeds the capabilities of any other OFDMA system.
- ❑ LTE has become the technology platform of choice as GSM/UMTS and CDMA/EV-DO operators are making strategic long-term decisions on their next-generation platforms. In June of 2008, after extensive evaluation, LTE was the first and only technology recognized by the NGMN alliance to meet its broad requirements.
- ❑ GSM/HSPA will comprise the overwhelming majority of subscribers over the next five to ten years, even as new wireless technologies are adopted. The deployment of LTE and its coexistence with UMTS/HSPA will be analogous to the deployment of UMTS/HSPA and its coexistence with GSM.
- ❑ 3GPP is now studying how to enhance LTE to meet the requirements of IMT-Advanced in a project called LTE Advanced.
- ❑ UMTS/HSPA/LTE has significant economic advantages over other wireless technologies.
- ❑ WiMAX has developed an ecosystem supported by many companies, but it will still only represent a very small percentage of wireless subscribers over the next five to ten years.

Building on a customer base exceeding 3.3 billion connections today including an estimated 251.5 million UMTS/HSPA mobile broadband subscriptions (September 2008), the GSM family of technologies is available on 750 networks in 218 countries of the world. EDGE is commercial on 350 networks and UMTS has proven to be the most widely deployed 3G technology with more than 290 operators in various stages of deployment in 120 countries, of which 211 operators in 90 countries have upgraded to HSDPA services and continue network improvements to HSPA. Announcements have already begun in support of the next 3GPP evolutionary step to LTE, including trials and anticipated deployments, by the world's most prominent operators including AT&T, China Mobile, China Telecom, NTT DoCoMo, Verizon and Vodafone. In fact, combining the existing customer bases of the 20 or so operators, both GSM and CDMA operators, who have announced intentions to follow the LTE migration strategy, there are more than a billion connections represented today within their networks.