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Dear Mr. Levin:

On behalf of Motorola, I am submitting the following proposed text for inclusion in the Draft Report of the Secretary-General on IP Telephony (the "Report").

During the recent Experts Group meeting, Chairman Anthony Wong proposed that the Report be expanded to encompass IP Networks. The text that follows attempts to describe IP-based networks for the Technical Aspects portion of the Report, and includes information on the Wireless IP component that I had promised to draft at the meeting. I am also providing language for a separate section on IP Standards activities.

TECHNICAL ASPECTS
[Insert the following in between the Introduction and IP Telephony Standards Activities sections on Page 5 of the 1st Draft Report]

IP-based Network Architecture

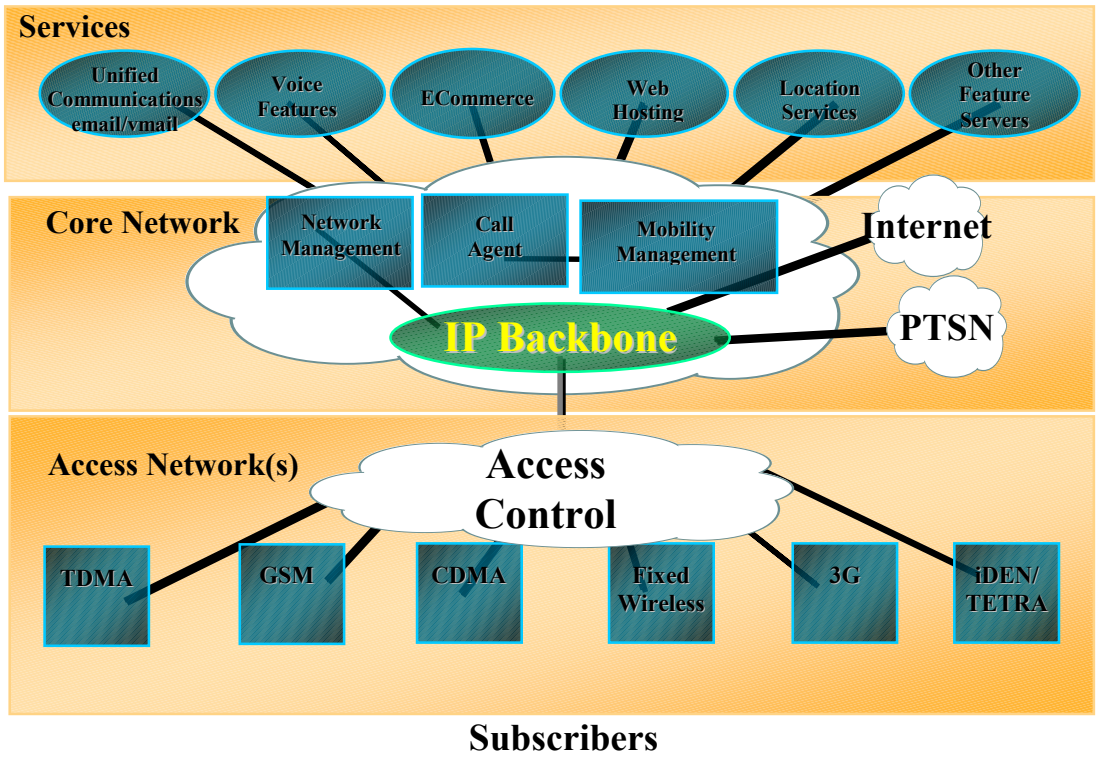
2.3 Circuit switching is the network architecture for the Public Switched Telephone Network (PSTN). It allows communications facilities, or circuits, to be shared among users, but with each user having sole access to a circuit, i.e. a circuit is dedicated to a user. This network is optimized for voice transmission. For mobile communications, the current wireless circuit switched networks use wireless air interface protocols (e.g. GSM, CDMA, TDMA) to connect to the circuit backbone and mobile switching center (MSC), which in turn communicates with other network devices (e.g. the PSTN and the Internet) on this dedicated circuit basis.

2.4 IP-based packet switched networks stand to change how carriers provide their service, how innovative and customized applications are offered, and how customers access them. The core of the IP-based network is packet switching. Instead of reserving a dedicated circuit for the length of the call, a packet switching network allows many users to share transmission capacity by breaking up information into packets and then using a transmission line to alternately send packets from several different users.

2.5 The IP backbone enables direct interconnection between wireless networks (e.g. cellular, paging) and both IP and non-IP networks (e.g. PSTN, Internet) without the need and consequent delay of going through a circuit switch gateway circuit. The result is that all IP-based networks have the ability to offer "bandwidth on demand" i.e. to carry a higher volume of converged voice, data and multimedia traffic over a common transmission and routing infrastructure more efficiently and at a lower cost. Additionally, the layered approach

of IP-based networks improves flexibility for operator access networks, core network providers and service providers. (See Figure A)

Figure A - IP-based Network Architecture



2.6 As voice becomes more and more a smaller fraction of the total percentage of bits transferred, deploying a network for the delivery of only voice services will not be justifiable. Consequently there will be an enormous effort to create IP technologies, which support real-time applications of reliable services and carrier grade quality. We have an idea of the robustness of this market as we note market predictions that the 500 million Wireless Voice Users and the 200 million Wired Internet Access Users will converge to become 1 billion Wireless Internet Access Users by the year 2005. All IP-based networks will ultimately bring us from a communications infrastructure to a true information infrastructure.

2.7 Vendors and operators are transforming themselves from voice-centric, circuit-switched providers of product to data-centric, IP-based providers of solutions and applications with capacities hundreds of times greater than today's networks and a rich source of revenues. Large operators have already begun investing in upgrading their networks towards an "all IP" architecture. It is expected that a deployment of all IP-based networks by operators, will first appear in Europe and Japan in 2002, with the rest of Asia second in 2003, and the Americas deploying in the late 2003 early 2004 timeframe, as is the case with 3G deployment.

Benefits of an IP-based Network

2.8 The ability of an all IP-based network architecture to connect the Internet, the PSTN, a myriad of enterprise applications, and existing and future third-party applications with the freedom of wireless mobility, is beneficial not only to operators, but third-party entrepreneurs, the consumer and society in general.

2.9 The convergence of wireless communications and the Internet will provide limitless access to information of all forms and provide extraordinary opportunity – it sets the stage for Universal Access and closing the gap between the "information haves and have-nots". We have already witnessed the explosive growth of the Internet and the resultant economic benefits, including increase in revenue and job opportunities and decrease in cost. These benefits are generating unprecedented interest from diverse industry sectors (e.g. wireless providers, content industry, ISPs, virtual network providers, IT industry, etc.), operators, service providers, consumers, regulators and governments.

2.10 The benefits IP-based Wireless networks provide to operators include an orderly migration path from existing technologies (2G, 2.5G, 3G), the capability of extending, reusing and upgrading existing technology investment in a modular fashion, improved system capacity and quality of service, and reduced network operating costs associated with the maintenance of leased lines and interconnects on the current circuit switched network.

2.11 Because IP is open and non-proprietary, it allows third party developers access and add applications and features to the network, which in turn enable them to provide feature-rich customized applications to the consumer. IP increases system performance and reliability. It allows for the creation, storage and access to a wide range of information resources.

2.12 For the consumer, there will be offered a choice of customized services and features at a lower cost. IP's interworking function ensures that appropriate network resources are assigned so that services (e.g. IP Telephony and Real Time Video) can be optimally delivered to a wide range of wireless and fixed subscriber devices.

2.13 Deployment of IP-based networks will be accompanied by a considerable decentralism of network management; access technology independence; different and constantly changing business and market models, especially to the pricing and financing schemes; the entry of many new industry players from other sectors, and an increasing concentration of broadband services environment on IP platforms which will resemble the Internet client/server model more than the traditional telecommunications model.

Wireless IP Standards Activities

2.14 The influence of the Internet and IP technology has extended to encompass the mobile communications industry where standards bodies, operators and radio access network (RAN) equipment vendors have embraced IP as the networking architecture of choice for delivering a whole new class of service application offerings and adding mobility to Internet accessibility.

2.15 Today's wireless core network is based on a circuit switched S7 architecture similar to that found in wireline telecommunication networks. With the advent of IP technologies and the tremendous growth in data traffic, the wireless industry is evolving their core networks toward IP technology.

2.16 Wireless telecommunications started as an offshoot of wireless telephony and with the absence of global standards resulted in regional standardization. Two major mobile telecommunication standards have dominated the global wireless market, namely TDMA/CDMA developed by TIA in North America and GSM developed by ETSI in Europe. As we move toward third generation wireless, there is a need to develop standards, which are more global and collaborative.

2.17 Recently the global wireless industry has created two new partnerships projects to address this issue:

2.17.1 3rd Generation Partnership Project (3GPP) which is developing 3G standards for GSM based systems and

2.17.2 3rd Generation Partnership Project 2 (3GPP2) which is developing 3G standards for IS-95 based CDMA standards.

2.18 3GPP and 3GPP2 have developed radio technology standards to support higher data rates and are now focusing on development of standards for all IP networks. The workplan anticipates that a recommendation on how the specification development should be done on all IP networks should be concluded by December 2001 for release to the Standards Development Organizations.

2.19 A common set of IP Mobility protocols are needed to provide network level mobility between different access networks including wireless. The IETF is developing a suite of protocols (Mobile IP) to achieve such mobility. A new Forum MWIF started recently intends to drive a single open mobile wireless Internet architecture that enables seamless integration of mobile telephony and Internet services and is independent of the access technology.

2.20 TIPHON (Telecommunications and Internet Protocol Harmonization Over Networks) is an ETSI body focused on the broad question of making the new IP networks interoperate with the old circuit switched networks.

2.21 T1 (an ANSI group) contributes to IP/telecom issues as well, and TIA (Telecommunication Industries Association) also has relevant working groups.

Thank-you for the opportunity to comment on the Secretary-General's Draft Report. If you have any questions, please do not hesitate to contact me at (202) 371-6930.

Sincerely,

Teresa O'Connor
Director, Global Regulatory Relations
Motorola