



Regulatory Framework on Interconnection for IP Based Networks, International Cable Landing Points and Leasing of Dark Fiber

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1. INTRODUCTION

- 1.1 The Telecommunications Act (the Act) states that “The Communications and Information Technology Commission (CITC) shall establish the terms governing public networks access rights, the interconnection points and the interconnected operators’ obligations.”
- 1.2 The Telecommunications Bylaw also provides the CITC with the power to regulate interconnection among service providers.
- 1.3 Interconnection based on fair prices and fair terms and conditions is a prerequisite for effective competition in the Kingdom.
- 1.4 The Saudi Telecom Company (STC) has published the approved Reference Interconnection Offer (RIO) which will be periodically updated.
- 1.5 This “Regulatory Framework on Interconnection for IP Based Networks, International Cable Landing Points and Leasing of Dark Fiber” addresses the specific issues of Internet Protocol (IP) based networks and Next Generation Networks (NGN), International Cable Landing Points and leasing of Dark Fiber.

2. DEFINITIONS AND DESCRIPTIONS

- 2.1 The words and expressions defined in the Commission Statutes shall have the same meaning when used in this regulatory framework. The following words and expressions shall have the meaning assigned to them below, unless the context requires otherwise.
- 2.2 “Dark fiber” means an individual fiber (or pair of fibers) within a fiber optic cable which does not have transmission equipment connected to it, and which may be available for rental to FBPs who may install their own transmission equipment at both ends of the dark fiber(s).
- 2.3 “Facilities Based Provider” (FBP) means a service provider who builds, owns and operates a public telecommunication network.
- 2.4 “International Cable Landing Points” means the location where an international submarine cable is connected to the public telecommunications networks.
- 2.5 “IP-based network” means a network in which the Internet Protocol is used as the Open System Interface (OSI) layer 3 protocol (OSI Reference Model).
- 2.6 “KSA” means the Kingdom of Saudi Arabia.

3. CONSIDERATIONS

- 3.1 The introduction of new IP based telecommunications networks and the gradual conversion of existing networks to IP technology in the KSA is anticipated as FBPs move from circuit-switched telecommunications networks to IP-based telecommunications network infrastructure.
- 3.2 The architecture of Next Generation Networks (NGNs) allows the decoupling of service and transport layers. This means that FBPs can enable new services by defining them directly in the service layer without considering the transport layer.
- 3.3 Protocol conversion needs to occur where traffic passes from a circuit switched network to an IP-based network and vice versa.
- 3.4 Implementation of IP-based networks may require FBPs to offer new interconnection services.
- 3.5 Currently, charges for call termination, origination and transit are charged on a time basis. In the area of IP interconnection for internet traffic, interconnection charges are usually calculated on a capacity basis.
- 3.6 IP interconnection presents specific challenges with regard to the measurement and maintenance of quality of service for different types of traffic as all types of traffic may be passed over the same logical links.
- 3.7 CITC recognizes that the QoS standards may differ for IP networks and circuit switched networks interconnections.
- 3.8 Two data service licensees and the second mobile licensee have entered into a Memorandum of Understanding (MoU), approved by the CITC, to build a national backbone network. The parties to the MoU are obligated to offer duct sharing and dark fiber to new FBPs.
- 3.9 Recent entry into the market of a new provider of international cable capacity is making available a second source of international cable capacity, other than that provided by the incumbent.
- 3.10 The CITC has also reviewed and assessed the comments received from the concerned parties in response to the Public Notice No. (8/1427) dated 15/04/1427H (13/05/2006) on the Proposed Policies Related to Fixed and Mobile Service Licensing in the KSA.

4. REGULATORY FRAMEWORK

- 4.1 The Commission Statutes are applicable to interconnections for IP based networks, International Cable Landing Points and leasing of Dark Fiber.

Services Supported across Interconnection to IP-based networks

- 4.2 The services to be supported across interconnection to IP-based networks must include the following:
- 4.2.1 end-to-end bidirectional and unidirectional Dual Tone Multi-Frequency (DTMF) tones
 - 4.2.2 in-band audio tones and announcements to the user
 - 4.2.3 presentation of a number in ITU-T E.164 format identifying the calling party
 - 4.2.4 transport of calling line identification and calling line identification restriction
 - 4.2.5 malicious call tracing
 - 4.2.6 emergency calling
 - 4.2.7 E.164 number portability

IP to IP Interconnection

- 4.3 The CITC encourages FBPs to reach agreements on the interconnection of new IP-based services on a commercial basis.

Quality of Service

- 4.4 The CITC encourages FBPs to reach agreements on Quality of Service levels for the interconnection of new IP-based networks on a commercial basis.

IP and Circuit Switched Interconnection Cost Allocation

- 4.5 Any additional costs for interconnecting IP-based and circuit switched networks and vice versa over those costs for circuit switched to circuit switched interconnection shall be borne by FBPs owning and operating the IP-based networks.

Capacity versus Time Based Interconnection

- 4.6 The CITC is exercising forbearance on the issue of capacity-based versus time-based charging for IP-based interconnection. The licensed FBPs are encouraged to negotiate agreements among themselves. The CITC will review the situation and will assist with resolving disputes if requested and introduce ex post regulations if required.

Symmetrical Charging

- 4.7 Per-unit charges for interconnection of a service type shall be symmetrical (e.g. charges for termination on new fixed FBP networks and on the incumbent's network shall be the same).

Interconnection at Cable Landing Points

- 4.8 FBPs may establish their own International Cable Landing Points after obtaining the necessary approvals and permits.
- 4.9 FBPs owning International Cable Landing Points may offer interconnection at International Cable Landing Point(s) controlled by them on commercial basis.

Leasing of Dark Fiber

- 4.10 FBPs wishing to lease dark fiber owned by STC may do so on commercial basis. The CITC will review the situation and may mandate STC, at a later stage, to offer dark fiber to other FBPs.