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Suruhanjaya Komunikasi dan Multimedia Malaysia
Malaysian Communications and Multimedia Commission

GUIDELINES ON TELEPHONY SERVICE OVER IP
(MCMC/G/02/05)

29 JULY 2005

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GLOSSARY

ATA	Analogue Telephone Adaptor
CDR	Call Data Record
CMA	Communications and Multimedia Act 1998
DLS	Digital Local Switch
DTS	Digital Trunk Switch
E1	A Unit of 2Mbps Capacity
IP	Internet Protocol
IPDR	Internet Protocol Detail Record
ISUP	ISDN User Part
MCMC	Malaysian Communications and Multimedia Commission
MGCP	Media Gateway Control Protocol
MGW	Media Gateway
NGN	Next Generation Network
Nomadic	Used while stationary
NSPC	National Signaling Point Code
PCS	Public Cellular Services
PDA	Personal Digital Assistant
POI	Point of Interconnect
POP	Point of Presence
PSTN	Public Switch Telephone Network
S.197	Section 197 of CMA
S.198	Section 198 of CMA
SCP	Service Control Point
SIP	Session Initiation Protocol
SPC	Signaling Point Code
SS7/C7	ITU-T Standard Signaling No. 7
SSP	Service Switching Point
STP	Service Transfer Point

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MALAYSIAN COMMUNICATIONS AND MULTIMEDIA COMMISSION

GUIDELINES ON TELEPHONY SERVICE OVER IP

TABLE OF CONTENT

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1.0 OBJECTIVES

1.1 The objective of these guidelines is to provide a guided approach for the introduction of the telephony service over IP by licensed service providers under the service number prefix 0154.

1.2 This service is an IP network service that supports applications services such as voice or data calls delivered over IP networks.

1.3 These guidelines aim to provide a framework to cover:

   1.3.1 Technical network attributes;

   1.3.2 Inter-network call routing arrangements between this service and between this service with the existing PSTN and/or the public cellular services;

   1.3.3 Customer arrangements;

   1.3.4 Charging principles;

   1.3.5 Quality of service;

   1.3.6 Other applications services; and

   1.3.7 Numbering allocation and usage.

1.4 It is important that these guidelines should be read together with the CMA, the relevant subsidiary legislations, instruments, codes and guidelines that have been issued by the MCMC pursuant to the CMA.

2.0 TECHNICAL NETWORK ATTRIBUTES

2.1 The service is defined as a fixed network service, but portable or nomadic applications are possible.

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2.2   The customer devices are connected to an IP based network services via connections wired or wireless media over narrow or broadband services.

2.3   The network service uses a repository of customer device numbers hosted on network elements such as softswitch or any directory based services to route calls.

2.4   The key elements of the service provisioning is as illustrated in figure 1 below;
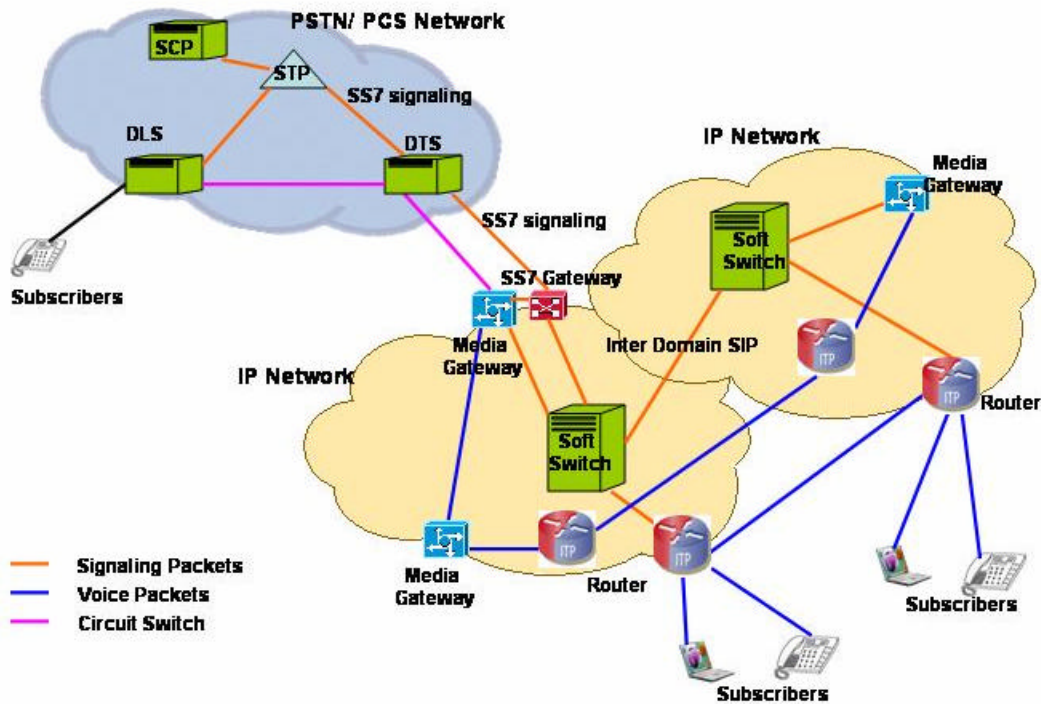

Figure 1: Inter-Networking Arrangement

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3.0   INTER-NETWORK CALL ROUTING ARRANGEMENTS

3.1   The following inter-network call connections are to be provided:

   3.1.1 IP telephone device to/from IP telephone device;

   3.1.2 IP telephone device to/from PSTN telephone; and

   3.1.3 IP telephone device to/from public cellular telephone.

3.2   For call connection between IP based networks, interconnection between the two networks must be arranged by the service providers.

3.3   However for call connection between IP network services and that of the PSTN and Public Cellular Service, service providers may have to explore the interconnect option using a single POI interconnect or multi POI interconnect as described below:-
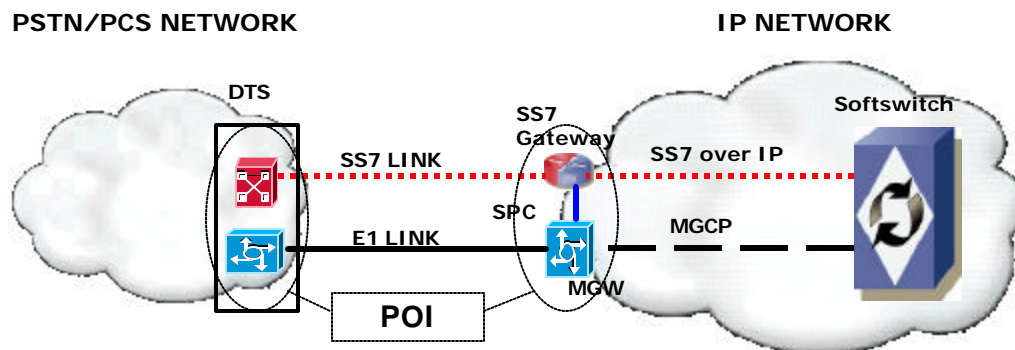
   3.3.1 Single POI Routing Arrangement
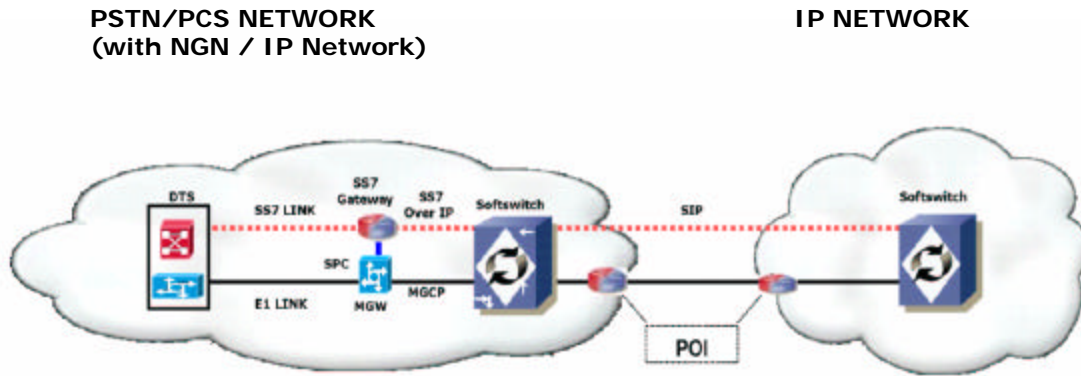

Figure 2: Single POI Routing Arrangement 1

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PSTN/PCS NETWORK　　　　　　　　　　　　　　　　**IP NETWORK**
(with NGN / IP Network)

Figure 3: Single POI Routing Arrangement 2

3.3.2　Multi POI Routing Arrangement
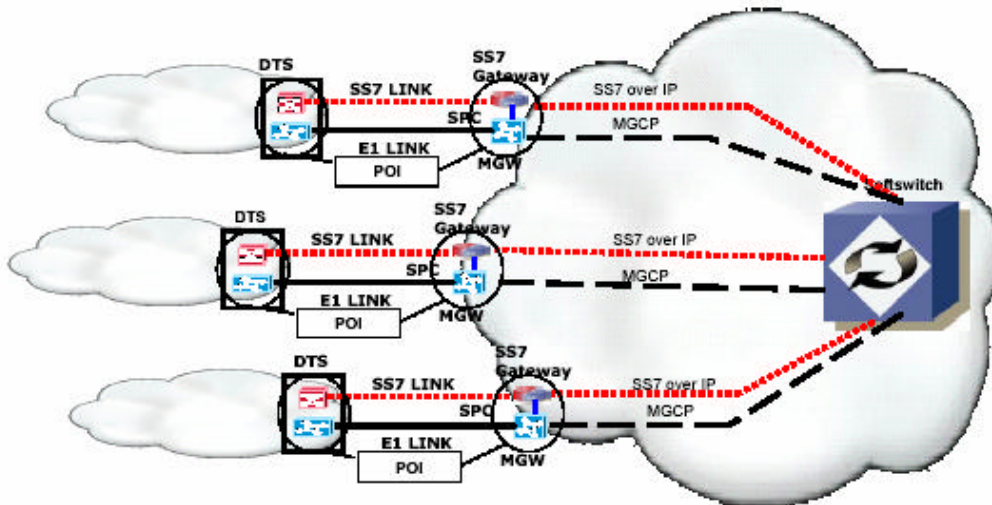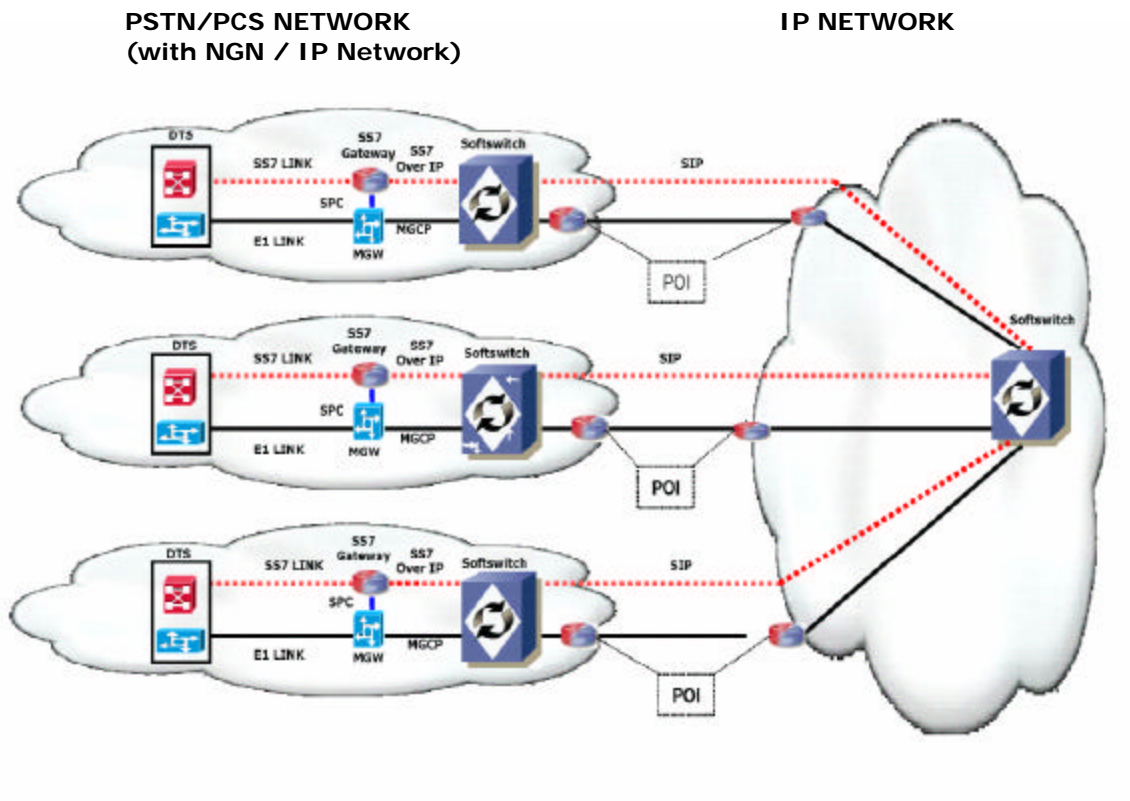

Figure 4: Multi POI Routing Arrangement 1

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Figure 5: Multi POI Routing Arrangement 2

3.4   The telephony service over IP   operators need to have in place the
       following key elements to manage call connections between the
       networks: -

       3.4.1 An operational IP network that supports call connections;

       3.4.2 A softswitch or   directory system hosting the   telephony service
              over IP numbers;

       3.4.3 A billing and IPDR/CDR system to record all calls made to and
              from the participating networks;

       3.4.4 A SS7/C7 signaling gateway for interconnection with the PSTN
              and public cellular networks at the POI;

       3.4.5 A location address of the interconnect point i.e. the POI;

       3.4.6 A NSPC number for assignment to the SS7/C7 gateways.

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4.0   CUSTOMER ARRANGEMENTS

4.1   Customers may access the telephony service over IP using an IP telephone device in combination with the following set up: -
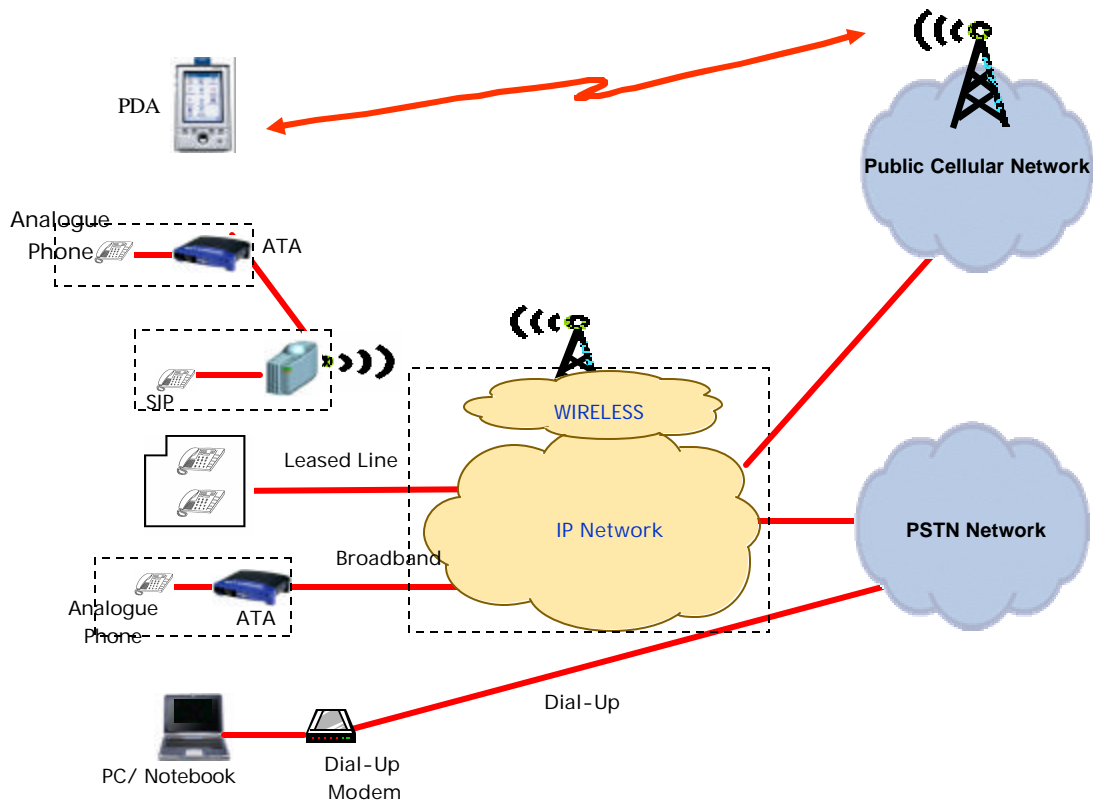
4.1.1 Using a PSTN line with a dial-up/Internet connection; or

4.1.2 Using a broadband Internet connection; or

4.1.3 Using a public cellular connection; and

4.1.4 An active account with their telephony over IP service provider.

The examples of customer access set up are illustrated as in the diagram in **Figure 6**;

Figure 6: Customer Access Set Up

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4.2   The IP telephone device may be an IP telephone, a PDA, a PC or notebook with IP telephone software or other similar devices.

5.0   CHARGING PRINCIPLES

5.1   The Access List, the Mandatory Standard on Access, and the Mandatory Standard on Access Pricing regulate call termination and origination services from PSTN and public cellular.

5.2   Prices for call termination and origination from the telephony service over IP network are not regulated and subject to commercially negotiated arrangements between parties.

5.3   Retail Rates to customers are not regulated but service providers are required to comply with the principles on rate setting as in S.197 and S.198 of the CMA.

6.0   QUALITY OF SERVICE

6.1   The voice quality shall be based on best effort services; the telephony service over IP network operators shall do its best endeavor to manage its network traffic to ensure voice clarity end to end.

6.2   For call termination, the service provider shall comply with the minimum quality requirements as in the Mandatory Standard on Access.

6.3   In the case of call failure, procedure in the Mandatory Standard on Access applies.

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7.0   OTHER APPLICATIONS SERVICES

7.1   The telephony service over IP operators are encourage to provide call termination for the following:

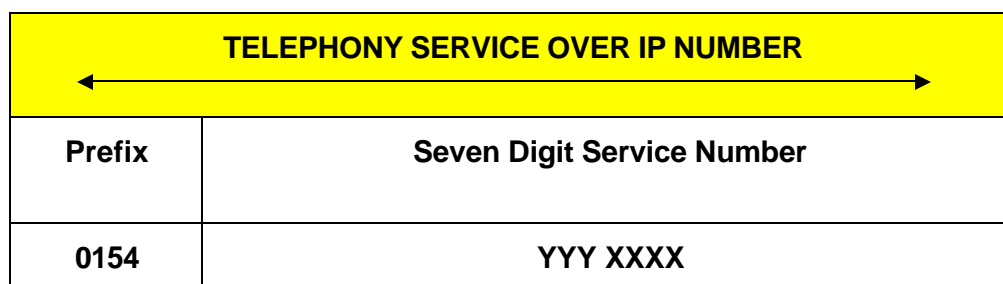7.1.1   Emergency services (999, 994 and 991);

7.1.2   Directory assistance services; and

7.1.3   Operator assistance services

8.0   NUMBERING ALLOCATION AND USAGE

8.1   The number structure of the telephony service over IP is as follows:

Figure 7: Telephony Service over IP Number Structure

TELEPHONY SERVICE OVER IP NUMBER	
Prefix	Seven Digit Service Number
0154	YYY XXXX

0154	=	Service Network Identifier
YYY	=	Service Provider
XXXX	=	Subscriber or Service Number where X = 0 to 9

8.2   The numbers shall be offered to customers registered in Malaysia. This is defined as a customer having either an Internet access, cellular telephone or fixed telephone subscription account in Malaysia.

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8.3   The Commission may assign blocks of numbers from time to time upon request by telephony service over IP operators.

8.4   Telephony service over IP service providers shall utilize the assigned numbers effectively and efficiently.

9.0   EFFECTIVE DATE AND REVISION

9.1   These guidelines shall come into effect on 29 July 2005 and shall continue to be effective until modified, varied or revoked by the Commission.

9.2   These guidelines are intended to be used as a guide only and do not prevail over any legislative provisions contained in the law.

9.3   <u>MCMC CONTACT</u>

For any queries and further information, please contact:

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