

GUIDELINES FOR SUBMISSION OF APPLICATION FOR SERVICES-BASED OPERATOR LICENCE

1 INTRODUCTION

- 1.1 The Singapore telecommunication services market was fully liberalised from 1 April 2000. As required under the Telecommunications Act (Cap. 323), any person operating and providing telecommunication systems and services in Singapore has to be licensed.
- 1.2 The Info-communications Development Authority of Singapore (IDA) has adopted a two-pronged licensing approach that differentiates between licensees based on the nature of their operations i.e. whether facilities-based or services-based type of operations. This set of Guidelines is intended to provide interested parties with an overview of the licensing framework for licence applicants intending to deploy services-based operations in Singapore and to guide them in applying for the relevant licences.

2 DESCRIPTION OF SERVICES-BASED OPERATIONS

- 2.1 Operators intending to lease telecommunication network elements (such as transmission capacity and switching services) from any Facilities-Based Operator (FBO) licensed by the IDA so as to provide their own telecommunication services, or to resell the telecommunication services of FBOs, to third parties; may apply to IDA for a Services-Based Operator (SBO) Licence. Operators who have deployed telecommunication network, systems and facilities within their own property boundaries, but wish to offer telecommunication services to third parties resident within their property boundaries, should also apply for an SBO licence.
- 2.2 The SBO licences issued by IDA fall under two categories: the **SBO (Individual) Licence** category, where individual licensing is required for the stipulated types of operations and services; and the **SBO (Class) Licence**¹ category, where interested parties will only be required to register with IDA



¹ A Class Licence is a licensing scheme where the terms and conditions are gazetted. Anyone who provides the services within the scope of the class licence will be deemed to have read and agreed to the terms and conditions of the class licence. Interested parties must first

before providing the stipulated types of services. Parties providing SBO operations and services will thus either be individually or classed licensed by IDA, depending on the scope of the operations and nature of the services. In general, operators who lease international transmission capacity for the provision of their services will be licensed individually. Interested parties should also note that separate licences or authorisation may be required from other relevant government agencies for the provision of certain types of SBO services and operations².

2.3 SBO (Class) Licensees shall not collect monetary deposits and/or use prepaid cards as a means of collecting payment from their customers. SBO (Individual) Licensees who collect monetary deposits and/or issue prepaid cards for collection of payments from their customers are required to have a paid-up capital of at least S\$100,000 at the point of licensing.

2.4 The range of operations and services that requires individual licensing under the SBO (Individual) Licence category includes, but is not limited to, the following:

- International Simple Resale (ISR)³
- Resale of Leased Circuit Services⁴
- Public Internet Access Services
- Internet Exchange Services
- Virtual Private Network Services
- Managed Data Network Services
- Mobile Virtual Network Operation
- Live Audiotex Services
- Prepaid Services for other telecommunication services such as:
 - Call-back / Call Re-origination Services
 - Internet Based Voice and Data Services
 - International Calling Card (ICC) Services
 - Resale of Public Switched Telecommunication Services
 - Store-and-Retrieve (S&R) Value-Added Network Services
 - Store-and-Forward (S&F) Value-Added Network Services
- Global Mobile Personal Communications by Satellite (GMPCS) Services
- IP Telephony Services
- Voice and Data Services with Masking of Calling Line Identity

register online through www.business.gov.sg/licences together with the necessary supporting documents.

² For example, an SBO (Individual) Licensee providing Internet access services will need to comply with terms and conditions that may be imposed by the Media Development Authority on the content transmitted.

³ This includes both voice and data traffic.

⁴ It will include Backhaul Bandwidth Capacity Services.

- Satellite Mobile Telephone or Data Services
- Mobile Communications on Aircraft

2.5 The range of operations and services that falls under the SBO (Class) Licence category includes, but is not limited to, the following:

- Call-back/Call Re-origination Services
- Internet Based Voice and Data Services
- International Calling Card (ICC) Services
- Resale of Public Switched Telecommunication Services
- Store-and-Retrieve (S&R) Value-Added Network Services
- Audiotex Services
- Public Chain Payphone Services
- Store-and-Forward (S&F) Value-Added Network Services

3 GENERAL LICENSING AND REGULATORY FRAMEWORKS

Licensing Framework

3.1 The scope and specific conditions for the provision of the respective services under the SBO (Individual) and SBO (Class) licences are provided in **Annexes 1 and 2** respectively. The general conditions of an SBO (Class) licence can be found in the Telecommunications (Class Licences) Regulations. Parties interested to apply for an SBO (Individual) Licence should submit their proposals to IDA in accordance with the procedural requirements outlined in Section 4 of this Guideline.

3.2 There is no limit on the operators who can be class-licensed. IDA will also not pre-determine the number of SBO (Individual) licences to be issued. The SBO (Individual) Licence will be granted if IDA is satisfied with the applicant's ability to deliver its proposed service and its quality of service standards commitments. There will be no foreign equity limit imposed for licensees. The Licensee shall be a company incorporated or a foreign company registered under the Singapore Companies Act, Chapter 50. SBO (Class) licences may also be held by a Limited Liability Partnership (LLP) or a Limited Partnership (LP).

3.3 A single SBO (Individual) licence will be issued to the successful applicant (or licensee) for each service category applied for, regardless of the range and types of operations and services to be provided under each service category. The Licensee however must seek the prior approval of IDA for any

subsequent changes to the scope of its operations and services. IDA will update its licence accordingly where applicable.

Regulatory Framework

- 3.4 All SBO licensees will be regulated in accordance with the licensing and regulatory frameworks established by IDA, which are formulated under the provisions of the Telecommunications Act (Cap. 323). Licensees are also required to comply with the Code of Practice for Competition in the Provision of Telecommunication Services (Telecom Competition Code), which aims to ensure the development of a fair and competitive telecommunication environment in Singapore. SBO (Individual) licensees may be required to comply with the Accounting Separation Guidelines. Interested parties may refer to the IDA website for copies of a generic SBO (Individual) licence, the Telecom Competition Code and other relevant guidelines issued by the IDA⁵.
- 3.5 IDA recognises that the info-communications environment is dynamic and ever-changing. IDA will continue to review and refine the regulatory frameworks to ensure their relevance, taking into consideration market trends and developments.

Licence Fees and Duration

- 3.6 Applicants for the SBO (Individual) and SBO (Class) Licences will be required to pay the fees as stipulated in the table below.

Licences	Licence/Registration Fee
Services-Based Operators to be Individually Licensed	
SBO (Individual)	Initial Fee: None Annual Fee: S\$5,000
Live Audiotex services only	S\$200 every five-yearly
Services-Based Operators to be Class-Licensed	
Audiotex services	S\$200 (one-time payment)
Call-back and call-origination services	S\$200 (one-time payment)
Internet based voice and data services	S\$200 (one-time payment)

⁵ IDA's website address is www.ida.gov.sg. The documents can be found under the Policy and Regulation section.

International calling card services	S\$200 (one-time payment)
Store-and-forward value-added network services	S\$200 (one-time payment)
Store-and-retrieve value-added network services (where leased circuits are used)	S\$200 (one-time payment)
Store-and-retrieve value-added network services (where no leased circuits are used)	No fee payable
Resale of public switched telecommunication services	No fee payable
Public Chain Payphone Service	No fee payable

Note:

Licence fees paid shall not be refunded (whether on a pro-rated basis or any other basis) in the event that the licence is cancelled by IDA in the following circumstances:

- (i) where the licensee requests for variation or early termination of its licence, or
- (ii) where IDA cancels the licence under Section 8 of the Telecommunications Act (Cap 323).

3.7 All SBO (Individual) licences are valid for a period of five years and renewable every five-yearly. No renewal is required for SBO (Class) licences.

Provision and Update of Information

3.8 To ensure that IDA has up-to-date information, every SBO (Individual) licensee is required to notify IDA of any changes or inaccuracy in the information and particulars submitted to IDA within five (5) days of such change. Such information and particulars shall, without limitation, include the licensee's name, address and contact particulars. This requirement does not relieve licensees of their obligation to obtain IDA's prior approval for any matter stipulated in their licence conditions.

3.9 In addition to the above, SBO (Individual) licensees who provide prepaid telecommunication services under which they collect monetary deposits or issue prepaid cards for the collection of payments from their customers shall provide IDA with the hotline enquiry number for such service. The licensee shall also notify IDA of any changes to the hotline enquiry number within five (5) days of such change.

- 3.10 With regard to SBO (Class) licensees, the Telecommunications (Class Licences) Regulations provide that it is a condition of every class licence that the licensee notifies IDA of any change or inaccuracy in its particulars, the description and scope of telecommunication systems and services run by it and any other information submitted to the IDA under the Regulations or the conditions of licence.

4 LICENCE APPLICATION PROCEDURE

- 4.1 Interested parties who wish to apply to IDA for an SBO Licence under the Individual category or register as an SBO Class Licensee, should submit their application via online business licensing service at <http://www.business.gov.sg/licences>. The names of all licensees will be posted on IDA's website.
- 4.2 IDA may seek clarification and additional information from any party arising from their application. Each application should include an address, contact telephone and facsimile numbers, and the name and designation of the contact person(s) for communication with IDA.
- 4.3 Successful applicants for the SBO (Individual) Licence will be awarded their licence within 14 working days of application submission, provided that the applicants have submitted all the necessary information requested by IDA for evaluation purposes and that IDA has completed all the clarifications with the applicants.
- 4.4 Applicants intending to provide Services under the SBO (Class) Licence will be registered upon submission of complete information and payment of registration fees (if any). Applicants must ensure that the information and representations submitted in their applications are accurate in all aspects. Under Regulation 7A(1) of the Telecommunications (Class Licences) Regulations ("Class Regulations"), no person shall furnish any false, misleading or inaccurate information to the Authority in relation to his registration under Regulation 4 of the Class Regulations. Any person who contravenes Regulation 7A(1) shall be guilty of an offence.
- 4.5 IDA reserves the right not to consider any applicant that includes any company related and/or associated with any FBO, and/or any of its subsidiary companies. A company is deemed to be related and/or associated with such an FBO, and/or its subsidiaries, if the FBO and/or its subsidiaries have influence on the company's policies and/or management.

5 CORRESPONDENCE/ENQUIRY

- 5.1 Any enquiry concerning this invitation to submit applications is welcomed. Enquiries in writing should indicate clearly on the cover “**Enquiries on SBO Licensing**” and should be addressed to:

Info-communications Development Authority of Singapore
10 Pasir Panjang Road
#10-01 Mapletree Business City
Singapore 117438
Fax: 66592503
Attn: The Deputy Director
Licensing Administrative Office

Notes:

- 1 This document has no legal standing and is not intended as a substitute for legal advice. While every effort has been made to provide an accurate and authoritative account of the licensing regime, the licence(s) to be granted to successful applicants will be the complete authoritative text.**
- 2 The information contained in this document is intended to assist interested parties in applying for the relevant licences. It does not bind IDA to any particular course of action in relation to the handling of any application, or to the terms of any licence to be granted, or to grant any licence to any party. IDA reserves the right to change its policies and/or to amend this document without prior notice.**
- 3 The grant of a Licence is at the sole discretion of IDA. IDA reserves the right not to accept any application submitted. IDA will undertake to explain to the applicant concerned, on the applicant’s request, why the applicant is unsuccessful in its application for a licence.**
- 4 The IDA reserves the right to disclose the identities of parties who have submitted applications. All other information received will be treated in confidence.**

**SCOPE AND SPECIFIC CONDITIONS FOR SERVICES
TO BE OFFERED UNDER THE
SERVICES-BASED OPERATOR (INDIVIDUAL) LICENCE**

1. International Simple Resale

Scope

- 1.1 International Simple Resale (ISR) is an alternative International Direct Dial (IDD) service provided by an SBO to customers using the international transmission facilities, such as frame-relay, ATM and leased circuits, owned by other FBOs. In the case of outgoing calls (originated from Singapore), the SBO collects traffic from the public telecommunication network of any FBO who owns international transmission facilities, transfers it to a line leased from any FBO, and then hands it over to a public telecommunication operator in an overseas country who will deliver the calls to their destinations. It therefore involves breakout onto the public telecommunication network at both ends, but with the international leg of the call being carried on leased circuit, frame-relay circuit, ATM or other international transmission facilities.

Specific Conditions

- 1.2 The successful applicant (or Licensee) shall not enter into any agreement or arrangement (whether legally enforceable or not) that will in any way prevent or restrict competition in relation to the operation of the systems or provision of services by the Licensee or any other telecommunication system and/or services licensed by IDA. In particular, the Licensee shall not give any undue preference to, or receive an unfair advantage from, a business carried on by it or an associated or affiliated company, service or person, if IDA is of the opinion that the Licensee's competitor could be placed at a significant competitive disadvantage or that competition would be prevented or substantially restricted.
- 1.3 The Licensee shall not enter into any agreement or arrangement with any supplier of international public switched services in another country, that has the effect of substantially and effectively distorting competition in the supply of international telecommunication services between that country and Singapore.
- 1.4 The Licensee shall ensure that any metering equipment used in connection with the services operated under the Licence is accurate and reliable.
- 1.5 Where required by IDA, the Licensee shall conduct tests on metering equipment to assess its accuracy, reliability and conformity to the technical

standards, if any, as specified by IDA. The Licensee shall submit the test results to IDA within 14 days after the date of the test or such other longer period as IDA may determine.

- 1.6 The Licensee may apply for an access code that allows callers to gain access to the ISR services. Upon justification and subject to the availability of such codes, IDA may assign a 4-digit access code (in the 15xx level) for the specified purposes. The Licensee shall ensure that such access code is used efficiently and effectively.
- 1.7 The Licensee shall provide the following arrangements in providing any international call service to consumers in Singapore:
 - (a) Service application or registration procedures for signing-up of customers before any service activation to ensure that subscribers are properly signed up for the international call services and that the right parties are being billed (except for prepaid card services).
 - (b) Some form of international call barring facilities to any consumer who wish to bar the Licensee's international call services, regardless of whether the consumer is a subscriber of any service provided by the Licensee, to further prevent any unauthorised or fraudulent activation of international call services⁶.

2. Resale of Leased Circuit Services

Scope

- 2.1 Parties interested to apply for an SBO (Individual) Licence to provide resale of leased circuit services may subscribe to leased circuit services⁷ from FBOs licensed by IDA. The Licensee may either resell the services or use the leased circuits on a shared basis for the conveyance of its own telecommunication traffic.

⁶ IDA has required FBOs, with direct connection to end-users, to provide open network access to International Direct Dial (IDD) service providers such that each IDD service provider is its own "gatekeeper". Hence, the requirement for call-barring facilities is to further prevent any unauthorised or fraudulent service activation.

⁷ It shall include all transmission capacity and facilities required for establishing and providing the backhaul bandwidth capacity and connection services leased from a licensed FBO.

Specific Conditions

- 2.2 The Licensee may resell leased circuit services to the following two categories of customers:
- (a) Customers who are not holders of any SBO or FBO Licence – The Licensee shall ensure that these customers do not use the leased circuit services for the carriage of any third party traffic or to offer any form of public switched telecommunication services over the leased circuits. The leased circuits shall not be connected to any public switched networks at either or both ends of the circuit(s), whether in Singapore or in other countries. Only direct, point-to-point leased circuit connections between Singapore and the final destination for corporate communication of the customers is allowed.
 - (b) Customers who are holders of SBO or FBO Licences – Such customers may connect the leased circuits provided by the Licensee to any public switched networks at either or both ends of the circuit(s) for the provisioning of the services licensed by IDA.
- 2.3 The Licensee shall ensure that its customers declare in writing the usage of the leased circuits and their compliance with all licensing and regulatory conditions and requirements of IDA. The Licensee will be required to terminate its agreement with its customers if these customers are found to infringe any of the conditions in the Licence, the Telecommunications Act (Cap. 323) or any licensing/regulatory condition or requirement stipulated by IDA.

3. Public Internet Access Services

Scope

- 3.1 Any interested party may apply for an SBO (Individual) Licence to establish, install and maintain a public Internet access facility or system to provide public Internet access services in Singapore.

Specific Conditions

- 3.2 The Licensee shall comply at its own cost with any guideline established by IDA on electronic-mail address portability to be implemented by the Licensee.
- 3.3 The Licensee shall comply with such terms and conditions as may be imposed by the Media Development Authority (MDA) for the content that is transmitted through its system.

- 3.4 The Licensee shall comply with such frameworks as may be established by IDA for the publication of information pertaining to broadband Internet access services offered by the Licensee, including but not limited to the access speeds, throughput, round-trip latency, webpage loading time and any other information that IDA may require the Licensee to publish.

4 Internet Exchange Services

Scope

- 4.1 An Internet Exchange is a physical interconnection site for any operator, except holder of an SBO (Class) Licence, to link to the global Internet backbone that serves as a form of international transmission media. Such an exchange aggregates the operators' traffic before sending it via leased circuits to the Internet backbone in the US or other countries, thus reducing the need for each operator to set up its own direct links. An Internet Exchange may also act as a connection point for the exchange of local traffic between operators within Singapore.
- 4.2 Any interested party may apply for an SBO (Individual) Licence to establish, install and maintain an Internet Exchange facility or system for providing high-speed bandwidth connections to the Internet backbone to any operator licensed by IDA, except a holder of an SBO (Class) Licence, or to operators and corporations operating overseas.

5. Virtual Private Network Services

Scope

- 5.1 The Virtual Private Network (VPN) services enable a customer to establish a private network over an FBO's international switching and transmission facilities or the Internet access facilities of a licensed SBO, for the purpose of providing telecommunication (including voice and data) services.

Specific Conditions

- 5.2 The Licensee shall comply with any technical specifications prescribed by IDA for the purposes of ensuring technical compatibility, avoiding technical harm to the telecommunication network of any FBO or preventing safety hazards to the personnel in the connection of telecommunication equipment and/or systems to the network.

- 5.3 The Licensee shall conform to any numbering plan made or approved by IDA and any direction given by IDA in respect of the numbering plan.
- 5.4 The Licensee shall take all reasonable steps to ensure that any metering equipment used in connection with the services operated under the Licence is accurate and reliable.
- 5.5 Under the written request of IDA, the Licensee shall conduct tests on metering equipment to assess its accuracy, reliability and conformity to the technical standards, if any, as specified by IDA. The Licensee shall submit the test results to IDA within 14 days after the date of the test or such other longer period as IDA may determine.

6. Managed Data Network Services

Scope

- 6.1 A Managed Data Network Service (MDNS) is a telecommunication service operated by an SBO who, through the use of leased circuits subscribed from an FBO or an SBO licensed to resell leased circuit services, establishes and manages the services, circuits and networks for the conveyance of data and voice messages, on behalf of the customers. The MDNS includes at least one or more of the following types of features:
 - (a) co-ordination with telecommunication operators in the establishment and management of private circuits and networks;
 - (b) provision of circuit capacity or bandwidth upon customer demand;
 - (c) fault or traffic congestion monitoring;
 - (d) alternative routing provision for fault restoration or relief of traffic congestion; and
 - (e) a single point of contact for customers and a single bill.

Unlike store-and-forward (S&F) value-added network services, MDNS do not necessarily include format, code and protocol conversion.

Specific Conditions

- 6.2 The Licensee shall comply with any technical specifications prescribed by IDA for the purposes of ensuring technical compatibility, avoiding technical harm to the telecommunication network and/or systems of FBOs or preventing safety hazards to personnel in the connection of telecommunication equipment and/or systems to the network.

- 6.3 The Licensee shall take all reasonable steps to ensure that any metering equipment used in connection with the services operated under the Licence is accurate and reliable.
- 6.4 Under the written request of IDA, the Licensee shall conduct tests on metering equipment to assess its accuracy, reliability and conformity to the technical standards, if any, as specified by IDA. The Licensee shall submit the test results to IDA within 14 days after the date of the test or such other longer period as IDA may determine.

7 Mobile Virtual Network Operation

Scope

- 7.1 This Licence enables the Licensee to operate as a Mobile Virtual Network Operator (MVNO). An MVNO is an operator who provides mobile subscription and call services to its customers with no allocation of spectrum. The MVNO must use part of the networks of the mobile operator(s) licensed by IDA under the FBO Licence to originate and deliver its customers' calls. The MVNO must pay the licensed mobile operator(s) with the FBO Licence(s) for the use of the network and/or the essential radio segment of the network(s).

Specific Conditions

- 7.2 The Licence shall ensure that any person through functioning mobile terminal equipment may at any time and without charge, contact the relevant police service (namely 999 or its substitute number), the fire and ambulance services (namely 995 or its substitute number) and any other national emergency services which the Minister may from time to time designate, for the purpose of notifying them of any emergency.
- 7.3 The Licensee shall implement number portability from commencement of service.
- 7.4 The Licensee shall comply, at its own cost, with any requirements and guidelines established by IDA on number portability to be implemented by the Licensee.
- 7.5 IDA reserves the right to establish minimum quality of service standards for the Services provided by the Licensee with which the Licensee shall comply.

- 7.6 The Licensee shall not provide the Services to any person below the age 15 years.

Registration of Customers of Prepaid SIM Cards

- 7.7 The Licensee shall work with the mobile operator whose networks it uses to provide the Services to ensure the maintenance of a register containing records of every customer that purchases the Licensee's prepaid SIM cards which shall be made available for inspection by authorised Singapore government agencies. The register shall contain the following particulars of the customers:
- (a) Name, address and as applicable, NRIC number, 11B number, passport number, work permit number or business registration number (or, where the customer is not located in Singapore, the applicable identification details obtained through appropriate documents that are recognised by the authorised establishments in the country of purchase, shall be used instead);
 - (b) Mobile cellular number assigned to the customer; and
 - (c) Date of activation of the customer's account.
- 7.8 IDA reserves the right to require the Licensee to record any other details as necessary in its register of customers.
- 7.9 Before recording the particulars referred to in paragraph 7.7, the Licensee shall:
- (a) where the customer is in Singapore, require the production of the customer's identity card issued under the National Registration Act (Cap. 201), the Singapore Armed Forces Act (Cap. 295), the Police Force Act (Cap 235), the Civil Defence Act (Cap. 42), passport or Employment Pass as applicable and make and keep a photocopy of such evidence of identity; or
 - (b) where the customer is not in Singapore, the Licensee shall use its best efforts to verify the identity of the customer through appropriate documents that are recognised by the authorised establishments in the country of purchase.
- 7.10 The records in the register shall be kept by the Licensee for a period of not less than 12 calendar months from the date of termination of the Services to the customer.

Registration of Retailers of Prepaid SIM Cards

- 7.11 The Licensee shall:
- (a) distribute its prepaid SIM cards only to its authorised retailers; and
 - (b) allocate its prepaid SIM cards to such retailers based on actual sales and activation.
- 7.12 The Licensee shall maintain a register containing records of every retailer of its prepaid SIM cards which shall be made available for inspection by authorised Singapore government agencies. The records shall contain the following particulars of the retailer:
- (a) Name, business address and as applicable, NRIC number, passport number or business registration number of the retailer in Singapore;
 - (b) Where the retailer is not based in Singapore, the applicable identification details obtained through appropriate documents that are recognised by the authorised establishments in the country of origin, shall be used instead;
 - (c) Contact telephone number(s) of the retailer; and
 - (d) Prepaid cellular mobile number accounts allocated by the Licensee to the retailer for sale.
- 7.13 The Licensee shall ensure that the retailers selling its prepaid SIM cards obtain the information and observe the requirements set out in paragraphs 7.7, 7.8 and 7.9. Where the Licensee's retailer conducts in-flight or overseas sales of the Licensee's prepaid SIM cards, the Licensee shall ensure that such retailer forwards the customer's records to the Licensee within 7 working days from the date of purchase.
- 7.14 IDA reserves the right to require the Licensee to record any other details as necessary in its register of retailers.
- 7.15 The records in the register shall be kept at the Licensee's premises for a period of not less than 12 calendar months from the date on which the retailer ceases to sell the Licensee's prepaid SIM cards.

Access to the Registration Information

- 7.16 The Licensee shall ensure that all electronic systems (including systems used by its authorized retailers) connected to and used for the purposes of maintaining the registers of customers and retailers of prepaid SIM cards under paragraphs 7.7 to 7.10 and paragraphs 7.11 to 7.15 are in compliance with the ISO/IEC 27002:2005 Code of Practice for Information Security Management.
- 7.17 The Licensee shall maintain records of all access to the registers of customers and retailers of prepaid SIM cards. The records shall include the name, user ID and employer company of any person accessing the registers, the date and time of each incidence of access by such person, and any other information which IDA may require the Licensee to include from time to time.
- 7.18 The records of access referred to in paragraph 7.17 shall be submitted to IDA and/or authorised Singapore government agencies for audit checks where required by IDA and/or authorised Singapore government agencies.
- 7.19 The registers of customers and retailers of prepaid SIM cards shall reside in Singapore. The Licensee shall not replicate or allow there to be any replication of the registers of customers and retailers of prepaid SIM cards without the prior written approval of IDA.
- 7.20 IDA reserves the right to require the Licensee to comply with any other security requirements as necessary on the registers of customers and retailers of prepaid SIM cards.

Service Registration for Post-Paid SIM Cards

- 7.21 The Licensee shall provide procedures for service application or registration before any service activation to ensure that subscribers are properly signed up for the Services provided through post-paid SIM cards and that the right parties are being billed.
- 7.22 The Licensee shall maintain a register containing records of every subscriber which shall be made available for inspection by authorized Singapore government agencies. The register shall contain the following particulars of the subscribers:
- (a) Name, date of birth, address and as applicable, NRIC number., 11B number, passport number, work permit number or business registration number;
 - (b) Mobile cellular number assigned to the subscriber; and

- (c) Dates of activation and termination of the subscriber's account.
- 7.23 IDA reserves the right to require the Licensee to record any other details as necessary in its register of subscribers.
- 7.24 Before recording the particulars referred to in Condition 7.22, the Licensee shall require the production of the subscriber's identity card issued under the National Registration Act (Cap. 201), the Singapore Armed Forces Act (Cap. 295), the Police Force Act (Cap 235), the Civil Defence Act (Cap. 42), the passport or Employment Pass as applicable and make and keep a photocopy of such evidence of identity.
- 7.25 The records in the register shall be kept by the Licensee for a period of not less than 12 calendar months from the date of termination of the Services to the subscriber.

8 Live Audiotex Services

Scope

- 8.1 Live Audiotex services are value-added network (VAN) services that connect callers to a live operator who provide information on specific topics over the phone.

Specific Conditions

- 8.2 The Licensee shall comply with the following transmission standards in the delivery of the announcement or programme:
- (a) There shall be no delay in starting the announcement or programme when a call is connected;
 - (b) Each of the live Audiotex services shall be assigned a different telephone number; and
 - (c) There shall be no interruption during the announcement or programme.
- 8.3 The Licensee shall ensure that the number of attempted calls at any time does not significantly exceed the number of call-in lines for the service and shall subscribe for additional lines from an FBO to adequately handle calls for the Live Audiotex services and to prevent congestion to other users of the public telecommunication network.
- 8.4 The Licensee shall not, except with the prior arrangement with an FBO, organise any mass calling event which will generate a high influx of calls to the Live Audiotex services.

- 8.5 The Licensee shall not enable callers to communicate amongst themselves directly in real-time.
- 8.6 The Licensee shall be solely responsible for the content and its accuracy and shall obtain all necessary approvals from the relevant authorities in Singapore.
- 8.7 The Licensee shall announce the current call charges for the Live Audiotex services at the beginning of the call and shall provide a grace period during which calls are not charged. The Licensee shall also arrange for the live operator to announce the call duration to callers at regular intervals of a maximum of 15 minutes.

9 Prepaid Services

9.1 (A) Prepaid Call-back / Call Re-origination Services

Scope

9.1.1 Call-back and call re-origination services are International Direct Dial (“IDD”) call reversal services passing over any FBO’s international telephone gateway and public switched telecommunication network or local call reversal services passing over any FBO’s public switched telecommunication network. It does not include the carriage of voice and data traffic over frame-relay or through leased circuits.

Specific Conditions

9.1.2 The Licensee shall not route the voice or data traffic or both over frame-relay or through leased circuits.

9.1.3 The Licensee shall distinguish its services from IDD services by including the term “call-back”, “call re-origination” or its equivalent in their marketing and promotion materials.

9.2 (B) Prepaid Internet Based Voice and Data Services

Scope

9.2.1 The Internet based voice and data services are the carriage of voice and data services through the Internet access facilities provided by licensed SBOs.

9.3 (C) Prepaid International Calling Card Services

Scope

9.3.1 The International Calling Card (“ICC”) services are services that use Personal Identification Number (“PIN”) validation and call routing through an FBO’s international telephone gateway to provide IDD services.

9.3.2 The Licensee shall not route voice or data traffic or both over frame-relay or through leased circuits.

9.4 (D) Prepaid Resale of Public Switched Telecommunication Services

Scope

9.4.1 The public switched telecommunication services specified in paragraph 9.4.2 may be resold where they are provided through:

- (a) an FBO who is licensed to provide public basic telecommunication services, public cellular mobile telephone services or public radio paging services; or
- (b) an SBO who is licensed to provide international simple resale, mobile virtual network operation, international calling card services, Internet based voice and data services, or call-back and call re-origination services.

9.4.2 The telecommunication services referred to in paragraph 9.4.1 are the following public switched telecommunication services (whether domestic or international):

- (a) public switched telephone services, other than public chain payphone services and services exempted from licensing under the Telecommunications (Exemption of Resellers of Local Calls Operating Coinafons or Payphones) Notification 2007;
- (b) public cellular mobile telephone services;
- (c) public radio paging services;
- (d) public switched message services;
- (e) public switched data services; and
- (f) public integrated services digital network services.

Specific Conditions

- 9.4.3 The Licensee shall not, except with the approval of IDA, engage in the construction or building of any telecommunication system.
- 9.4.4 Where the Licensee subscribes to any domestic or international leased circuit, it shall not, except with the approval of IDA, provide its users with any direct or indirect connection to that leased circuit.
- 9.4.5 The Licensee shall market itself as a reseller of telecommunication services.
- 9.4.6 The Licensee shall list the rental of equipment charge and the usage charge separately in its bills to its users.
- 9.4.7 Where the Licensee provides the services through resale or shared use of PABX, the Licensee shall not restrict the occupants of the premises served by the PABX from subscribing to services or facilities directly from any FBO or SBO.
- 9.4.8 The Licensee shall enter into a written service agreement with each of its users except users of an international payphone service provided by the Licensee in any single customer premises.

9.5 (E) Prepaid Store-and-Retrieve Value-Added Network Services

Scope

- 9.5.1 Store-and-retrieve (“S&R”) value-added network services are any of the following services provided by telecommunication systems, built over and above the telecommunication systems operated by an FBO and accessed through public telecommunication systems or leased circuits, which allow telecommunication traffic between a user and the value-added network or between users:
 - (a) on-line information and database retrieval services;
 - (b) on-line information and data processing services;
 - (c) voice information services;
 - (d) electronic broking services;
 - (e) transaction services such as on-line shopping, on-line reservation service, etc.;
 - (f) remote computing services;
 - (g) on-line games;

- (h) mailbox services including e-mailbox, voice-mailbox, facsimile-mailbox and multimedia mailbox;
- (i) electronic data interchange services;
- (j) store-and-retrieve file transfer services;
- (k) electronic chatting services;
- (l) bulletin board services; and
- (m) other multimedia services where the content or format of the telecommunication traffic is changed or processed.

Specific Conditions

- 9.5.2 The Licensee shall not, except with the prior approval of IDA, carry any store-and-forward telecommunication traffic through the value-added network.
- 9.5.3 The Licensee shall not, except with the prior approval of IDA, provide value-added network services of another value-added network through a leased circuit connecting its value-added network to the other value-added network.
- 9.5.4 The licensee must publish its name as registered with the Accounting and Corporation Regulatory Authority in any advertisement of its services.

9.6 (F) Prepaid Store-and-Forward Value-Added Network Services

Scope

- 9.6.1 The store-and-forward value-added network services are the services specified in paragraph 9.6.2 which have a value-added function at one end (such as the originating end) and are provided only on a call-by-call basis.
- 9.6.2 The store-and-forward value-added network services⁸ referred to in paragraph 9.6.1 are any or both of the following:

⁸ Examples of S&F VAN services are:

- a) Value-added data services via dial-up access, e.g., protocol conversion between asynchronous and X 25, and value-added data services provided via leased line access subject to justification of users.
- b) X.400 based interpersonal messaging service with at least one value-added function listed in paragraph 9.6.1(b).

- (a) value-added data services being packet switched data services which convey end-to-end non-voice traffic by providing the value-added function of code and protocol conversion; or
- (b) value-added messaging services being value-added store-and-forward electronic-messaging service, value-added store-and-forward facsimile, value-added store-and-forward telex (excluding telegram) services and value-added store-and-forward voice mail services, that provide one or more of the following value-added store-and-forward functions on a non real-time basis⁹:
 - (i) deferred delivery;
 - (ii) multi-addressing;
 - (iii) content conversion;
 - (iv) format conversion, such as conversion from text-to-fax, text-to-telex, text-to-voice, fax-to-telex, fax-to-voice, telex-to-voice or vice versa;
 - (v) processing of control information (such as destination address) with or without modification to the content; or
 - (vi) any other conversion that provides the users with additional, different or restructured information.

Specific Conditions

- 9.6.3 A licensee shall ensure that the value-added function is to be provided on a call-by-call basis.
- 9.6.4 In the event that a licensee decides to terminate its value-added network services, it must notify the Authority in writing of its intent.
- 9.6.5 A licensee must provide the store-and-forward value-added network services through -
 - (a) a service node in Singapore and, whenever requested by the Authority, make available the information on the routing table, subscriber database, call traffic statistics and other records maintained by the service node for inspection by the Authority; or
 - (b) a local access node which is connected to the public switched telecommunication networks provided by a FBO.

⁹ These value-added functions exclude those that are performed solely for the inherent benefit of the network. An example of exclusion is any protocol conversion that is performed automatically in order to establish the call through the network which results in the same type of protocol being provided at both ends of the call.

10 Global Mobile Personal Communications by Satellite (GMPCS) Services

Scope

- 10.1 The Licence enables the Licensee to provide global mobile personal communications services such as voice telephony, paging, data messaging or broadband multimedia services on a regional or global basis, using Low Earth Orbit ("LEO"), Medium Earth Orbit ("MEO") or Geostationary Orbit ("GEO") satellite technologies.
- 10.2 For avoidance of doubt, the Licence is only for providing GMPCS services and not for setting up the operation of a GMPCS system.

Quality of Service Standards

- 10.3 IDA reserves the right to establish minimum quality of services standards for the Services provided by the Licensee with which Licensee shall comply.

11 IP Telephony Services

Scope

- 11.1 The Licence enables the Licensee to provide IP Telephony services using E.164 telephone numbers¹⁰ for such services and assigning such numbers to the Licensee's customer (referred to in this Annex as an "IP telephony number"). Such services allow customers to make and receive voice, data and/or video calls using the same telephone number from any domestic or overseas location where broadband Internet access is available.
- 11.2 Upon receiving the approval from IDA for the provision of IP Telephony services, licensees may apply to IDA for the allocation of telephone numbers for such services.
- 11.3 SBO (Individual) licensees will be allocated 8-digit number blocks starting with level "3" only. For the avoidance of doubt, while IDA does not allocate number level "6" to SBO licensees, an SBO licensee may however enter into a commercial agreement with an FBO licensee to obtain services with number level "6" and use such service as an input to provide its own IP Telephony

¹⁰ An International Telecommunications Union Telecommunications Standardization (ITU-T) standard network addressing format for telephone numbers. The E.164 addresses are 15 decimal digits long and include a country code, area or city code, and a local number.

service. This is provided always that the SBO licensee complies with the additional requirements set out in Conditions 11.30 to 11.36.

- 11.4 Telephone numbers will be allocated through either an administrative allocation or an auction process. To allow licensees to select the numbers they desire through a market-based approach, IDA will periodically hold auctions for such telephone numbers. For these requests, number levels are generally be allocated in a sequential manner.
- 11.5 For the avoidance of doubt, any licensee who intends to provide IP Telephony services using E.164 telephone numbers and allocating such numbers to its customers in Singapore to access such services, regardless of whether such telephone numbers are issued by IDA, must obtain an SBO (Individual) licence from IDA.
- 11.6 For more information on IDA's guidelines on number allocation to licensees, please refer to IDA's National Numbering Plan and guidelines at the IDA website (www.ida.gov.sg).
- 11.7 SBO licensees offering IP Telephony services with 8-digit numbers starting with level "3" issued by IDA, or other E.164 telephone numbers issued by overseas administrators will not be required to provide number portability, unless otherwise informed by IDA.
- 11.8 The Telecom Competition Code sets out the interconnection and access requirements to be complied by licensees. Licensees can decide to set up a "close-user" network and not request for interconnection with existing telecommunication networks in Singapore. If licensees intend to interconnect with existing telecommunication networks in Singapore, they are to commercially negotiate and pursue the most appropriate interconnection arrangements with other licensees. Licensees may agree to interconnect on any mutually agreeable terms, but must still observe the Minimum Interconnection Duties, set out in the Telecom Competition Code, for establishing interconnection agreements. IDA will generally not involve itself in interconnection negotiations between non-dominant licensees.
- 11.9 For interconnection with Dominant Licensees, a licensee issued with E.164 telephone numbers by IDA, may do so pursuant to commercial arrangements or negotiate an individualised interconnection agreement, following the procedures set out in the Code. If licensees fail to reach an interconnection agreement, licensees may request for IDA to resolve the dispute under the Telecom Competition Code. As guidance to the industry, IDA has issued a "Guide to Interconnection with Dominant Licensee" attached as Annex 1B, outlining different interconnection approaches and methods.

- 11.10 SBO licensees offering IP Telephony services with 8-digit numbers starting with level “3” issued by IDA or other E.164 telephone numbers issued by overseas administrators will not be required to comply with any QoS standards established by IDA, unless otherwise informed by IDA.
- 11.11 SBO licensees offering IP Telephony services with 8-digit numbers starting with level “3” issued by IDA or other E.164 telephone numbers issued by overseas administrators are not required to provide access to emergency services, directory enquiry and directory services. However, licensees are required to inform customers on whether access to emergency service is provided. Licensees who wish to provide emergency services access are required to provide it at no charge. IDA reserves the right to require the provision of emergency call services, directory enquiry and directory services at a later stage, depending on market development.
- 11.12 In co-operation with law enforcement agencies to enhance necessary measures for public safety and security, IDA will require all IP Telephony service providers to comply with specific licence requirements. These requirements include proper access to emergency services (if access to such services is provided) and the recording and verification of subscribers and resellers' particulars.

Specific Conditions¹¹

- 11.13 The Licensee shall disclose in advance to its customers whether the Services it provides may be used to contact the police emergency service (namely 999 or its substitute number), the fire and ambulance services (namely 995 or its substitute number) and any other national emergency services which the Minister may from time to time designate, for the purpose of notifying such services of any emergency.
- 11.14 The Licensee shall not charge its customers for any use of the Services to contact the emergency services referred to in Condition 11.13 of this Annex.
- 11.15 IDA reserves the right to require the Licensee to comply with additional safety and security safeguards to enhance security measures for public and national safety.

¹¹ Additional conditions for providing IP Telephony Services may be imposed on the SBO licensee upon grant of licence.

11.16 The Licensee shall at its own expense, comply with any requirement and guidelines established by IDA on number portability required to be implemented by the Licensee.

11.17 IDA reserves the right to establish minimum quality of service standards for the Services provided by the Licensee with which the Licensee shall comply.

11.18 The Licensee shall maintain a register containing records of its subscribers and their particulars which shall be made available for inspection by authorised Singapore government agencies. The records shall contain the following particulars of the subscribers:

(a) Name, address and, as applicable, NRIC number, passport number or business registration number of the subscriber (or, where the subscriber is not located in Singapore, the applicable identification details obtained through appropriate documents that are recognised by the authorised establishments in the country of purchase, shall be used instead);

(b) IP telephony number assigned to the subscriber;

(c) Date of activation of the subscriber's account;

(d) Internet Service Provider account used by the subscriber to access the Licensee's IP Telephony Service where applicable; and

(e) Media Access Control ("MAC") / Internet Protocol ("IP") address where applicable.

11.19 IDA reserves the right to require the Licensee to record any other details as necessary in its register of subscribers.

11.20 Before recording the particulars referred to in Condition 11.18 of this Annex, the Licensee shall:

(a) where the subscriber is in Singapore, require the production of the subscriber's identify card issued under the National Registration Act (Cap. 201), passport or Employment Pass and make and keep a photocopy of such evidence of identity; or

(b) where the subscriber is not in Singapore, the Licensee shall use its best efforts to verify the identity of the subscriber through appropriate documents that are recognised by the authorised establishments in the country of purchase.

- 11.21 (a) The records in the register shall be kept at the Licensee's premises for a period of not less than 6 calendar months from the date of termination of the Services to the subscriber;
- (b) The Licensee shall maintain Call Detail Records ("CDRs") of all calls made and received through the Licensee's IP Telephony Services which are operated and/or provided in Singapore; and
- (c) All CDRs shall be kept by the Licensee in Singapore for a period of not less than 12 calendar months.
- 11.22 The Licensee shall maintain a register containing records of its retailers and their particulars which shall be made available for inspection by authorised Singapore government agencies. The records shall contain the following particulars of the retailer:
- (a) Name, business address and, as applicable, NRIC number, passport number or business registration number of the retailer in Singapore;
- (b) Where the retailer is not based in Singapore, the applicable identification details obtained through appropriate documents that are recognised by the authorised establishments in the country of origin, shall be used instead;
- (c) Contact telephone number(s) of the retailer; and
- (d) IP telephony number accounts allocated by the Licensee to the retailer for sale
- 11.23 The Licensee shall ensure that retailers selling its Services obtain the information set out in Conditions 11.18, 11.19 and 11.20 of this Annex upon the registration of a subscriber and forward such information to the Licensee within 2 days of the activation of the subscriber's account.
- 11.24 IDA reserves the right to require the Licensee to record any other details as necessary in its register of retailers.
- 11.25 The records in the register shall be kept at the Licensee's premises for a period of not less than 6 calendar months from the date of which the retailer ceases to sell the Services of the Licensee.
- 11.26 IDA reserves the right to require the Licensee to do the following:

(a) to provide directory enquiry services based on an integrated customer database upon request to any person to whom the Licensee provides the Services; and

(b) to provide directory enquiry services for subscribers of other licensees;

and the Licensee shall comply with such requirements imposed.

11.27 IDA reserves the right to require the Licensee to do the following:

(a) to provide integrated directories for all subscribers at no charge (except with the approval of IDA) and at annual intervals or any other intervals to be agreed with IDA; and

(b) to exchange all relevant customer data with other licensees free-of-charge for the purpose of providing integrated directories and providing integrated directory enquiry services

and the Licensee shall comply with such requirements imposed.

11.28 The Licensee shall, if necessary, and subject to charges, terms and conditions to be agreed with other licensees, provide integrated directories for their subscribers. In the event that agreement cannot be reached, the matter shall be determined by IDA, whose decision shall be final.

11.29 Where the Licensee provides any of the Services utilising a level "6" telephone number, he shall comply with Conditions 11.30 to 11.36 in respect of such services (hereinafter referred to as "Level "6" Services"). For the purposes of these Conditions, "Fixed Network Telecommunication Services" means fixed line basic telephony services associated with number level "6".

11.30 The Licensee shall ensure that its subscribers must be able to receive and make voice calls from/to subscribers on any public switched telecommunication network, public mobile network or public digital voice network in Singapore.

11.31 The Licensee shall ensure that:

(a) any person through customer premises equipment that enables the use of its Level "6" Services; and

(b) any person through its public payphones that enables the use of its Level "6" Services,

may at any time and without charge, contact the relevant police emergency service (namely 999 or its substitute number), the fire and ambulance services (namely 995 or its substitute number) and any other national emergency services which the Minister may from time to time designate to be provided by operators of Fixed Network Telecommunication Services, for the purpose of notifying them of any emergency.

11.32 The Licensee shall ensure that its Level “6” Services comply with the same quality of service standards as may be established by IDA from time to time for Fixed Network Telecommunication Services.

11.33 The Licensee shall ensure that its Level “6” Services are only provided to domestic customers (within Singapore) with a Singapore registered and billing address.

11.34 The Licensee shall ensure that its Level “6” Services comply with the same standards and requirements for number portability as may be established by IDA from time to time for Fixed Network Telecommunication Services.

11.35 The Licensee shall:

- (a) provide directory enquiry services based on an integrated customer database upon request to any person to whom the Licensee provides its Level “6” Services; and
- (b) provide directory enquiry services for subscribers of other licensees in relation to all persons to whom the Licensee provides its Level “6” Services.

11.36 The Licensee shall:

- (a) provide integrated directories for all subscribers of its Level “6” Services at no charge (except with the approval of IDA) and at annual intervals or any other intervals to be agreed with IDA; and
- (b) exchange all relevant customer data of subscribers of its Level “6” Services with other licensees free-of-charge for the purpose of providing integrated directories and providing integrated directory enquiry services.

The Licensee shall, if necessary, and subject to charges, terms and conditions to be agreed with other licensees, provide integrated directories for their subscribers. In the event that agreement cannot be reached, the matter shall be determined by IDA, whose decision shall be final.

12 Voice and Data Services with Masking of Calling Line Identity

Scope

- 12.1 The Licence enables the Licensee to provide voice and data services with masking of the Calling Line Identity (“CLI”) of the calling party and/or called party. Such services allow subscribers of the Services to make and receive calls anonymously using masking numbers¹².

Specific Conditions

- 12.2 The Services shall be offered and provided only to the following persons:
- (a) properly-registered subscribers of any public switched telephone services operated in Singapore by any Facilities-Based Operator (“FBO”) designated by IDA as a Public Telecommunication Licensee; and
 - (b) properly-registered subscribers of any public cellular mobile telephone services operated in Singapore by any FBO.

The Licensee may offer the Services to members of the public who possess valid and authenticated levels “6”, “8” and “9” numbers.

- 12.3 The Licensee shall maintain a register containing records of its subscribers and their particulars which shall be made available for inspection by authorised Singapore government agencies in a timely manner. The Licensee shall also validate the identity of its subscribers when recording their particulars to ensure its accuracy. The records shall contain the following particulars of the subscribers:
- (a) Name, Singapore physical address, mobile/fixed line phone number, date-of-birth, nationality, email address and, as applicable, NRIC number, passport number, work permit or FIN number of the subscriber;
 - (b) Date of activation of the subscriber’s account;
 - (c) The masking number assigned to the subscriber;

¹² Subject to IDA’s approval, the Licensee of Voice and Data Services with Masking of CLI is exempted from Condition 12.3(a) of the Licence.

- (d) The history of all previous subscriptions to the Services by the subscriber (if any) including the details of the activation dates of such previous subscriptions and the masking numbers assigned in respect of such previous subscriptions; and
 - (e) Other demographic information.
- 12.4 IDA reserves the right to require the Licensee to record any other details as necessary in its register of subscribers.
- 12.5 The records in the register shall be kept at the Licensee's premises for a period of not less than 12 calendar months from the date of termination of the Services to the subscriber.
- 12.6 The Licensee shall ensure that it does not enable voice and data calls with masking of CLI to be made to the police emergency service (namely 999 or its substitute number), the fire and ambulance services (namely 995 or its substitute number) and any other national emergency services which the Minister may from time to time designate, for the purpose of notifying such services of any emergency.
- 12.7 The Licensee shall not provide the Services as prepaid services, or offer the Services to customers of mobile prepaid SIM cards of FBOs or customers of mobile prepaid SIM cards of SBOs that are licensed to operate as a Mobile Virtual Network Operator ("MVNO").
- 12.8 The Licensee shall not enable the Services to be used for foreign roaming numbers or overseas numbers.
- 12.9 The Licensee shall ensure that it does not enable voice and data calls with masking of CLI to be made to –
- (a) any telephone number that is 5-digits and below; and
 - (b) any 11-digit telephone number (e.g. 1800-xxxxxxx, 1900-xxxxxxx).
- 12.10 The Licensee shall take appropriate measures, including suspension or termination of the Services provided to any of its subscribers where necessary, to prevent the subscriber from using the Services to contravene any law or to cause disturbance or nuisance to any person or disrupt the provision or operation of any telecommunications service by other licensees of IDA.

- 12.11 The Licensee shall ensure that it is able to trace the calling and called parties of all calls originating from or terminating at the subscribers.
- 12.12 The Licensee shall work and cooperate fully with the authorised Singapore government agencies to render assistance in the tracing of calls originating from or terminating at its subscribers as and when required by authorised Singapore government agencies in a timely manner.
- 12.13 The Licensee shall maintain Call Detail Records (“CDRs”) of all calls made and received through the Services which are operated and/or provided in Singapore.
- 12.14 All CDRs shall be kept by the Licensee in Singapore for a period of not less than 12 calendar months.
- 12.15 All CDRs shall be made available for inspection by authorised Singapore government agencies in a timely manner.
- 12.16 The Licensee shall keep all billing records for a period of not less than 7 years from the date of issuance of the bill to its subscriber.
- 12.17 The Licensee shall only assign level “6” E.164 numbers to its subscribers as masking numbers. The Licensee shall provide and update IDA with the list of level “6” numbers that are used for the Services before assigning it to any subscribers.
- 12.18 The Licensee shall maintain an interval period of no less than 1 day before recycling any masking numbers for assignment to its subscribers.
- 12.19 The Licensee shall be required to subscribe to the level “6” numbers from the FBO(s) in accordance with the registration requirements imposed by the FBO(s).
- 12.20 IDA reserves the right to assign a new telephone number range specifically allocated to be used as masking numbers at any time upon written notice to the Licensee and IDA shall not be liable to any person for any loss or inconvenience directly or indirectly attributable to the assignment of such telephone number.
- 12.21 IDA reserves the right to require the Licensee to comply with additional security safeguards to enhance security measures for public and national safety.

13 Satellite Mobile Telephone or Data Services

Scope

- 13.1 The Licence enables the Licensee to provide mobile satellite services such as voice telephony, paging, data, messaging or broadband multimedia services on a regional basis, using Low Earth Orbit (“LEO”), Medium Earth Orbit (“MEO”) or Geostationary Orbit (“GEO”) satellite technologies.
- 13.2 For avoidance of doubt, the Licence is only for providing mobile satellite services and not for setting up the operation of a mobile satellite system.

Quality of Service Standards

- 13.3 IDA reserves the right to establish minimum quality of service standards for the Services provided by the Licensee with which the Licensee shall comply.

Registration of Subscribers

- 13.4 The Licensee shall provide procedures for service application or registration before any service activation to ensure that subscribers are properly signed up for the Services and that the right parties are being billed.
- 13.5 The Licensee shall maintain a register containing records of every subscriber based in Singapore which shall be made available for inspection by authorised Singapore government agencies. The register shall contain the following particulars of the subscribers:
- (a) Name, date of birth, address and as applicable, NRIC number, 11B number, passport number, work permit number or business registration number;
 - (b) Mobile/Fixed satellite communicator serial number of the subscriber; and
 - (c) Dates of activation and termination of the subscriber’s account.
- 13.6 IDA reserves the right to require the Licensee to record any other details as necessary in its register of subscribers.
- 13.7 Before recording the particulars referred to in Condition 13.5, the Licensee shall require the production of the subscriber’s identity card issued under the National Registration Act (Cap. 201), the Singapore Armed Forces Act (Cap. 295), the Police Force Act (Cap 235), the Civil Defence Act (Cap. 42),

passport or Employment Pass as applicable and make and keep a photocopy of such evidence of identity.

- 13.8 The records in the register shall be kept by the Licensee for a period of not less than 12 calendar months from the date of termination of the Services to the subscriber.
- 13.9 The Licensee shall maintain Transaction Records (“TRs”) of all non-voice calls and Call Detail Records (“CDRs”) of all calls made and received through the Services which are operated and/or provided in Singapore.
- 13.10 All TRs and CDRs shall be kept by the Licensee in Singapore for a period of not less than 12 calendar months.

Registration of Retailers

- 13.11 The Licensee shall maintain a register containing records of its retailers and their particulars which shall be made available for inspection by authorised Singapore government agencies. The records shall contain the following particulars of the retailer:
- (a) Name, business address and, as applicable, NRIC number, passport number or business registration number of the retailer in Singapore;
 - (b) Where the retailer is not based in Singapore, the applicable identification details obtained through appropriate documents that are recognised by the authorised establishments in the country of origin, shall be used instead;
 - (c) Contact telephone number(s) of the retailer; and
 - (d) Mobile/Fixed satellite communicator serial numbers allocated by the Licensee to the retailer for sale.
- 13.12 The Licensee shall ensure that retailers selling its Services obtain the information set out in Conditions 13.5, 13.6 and 13.7 upon the registration of a subscriber and forward such information to the Licensee within 2 days of the activation of the subscriber’s account.
- 13.13 IDA reserves the right to require the Licensee to record any other details as necessary in its register of retailers.

- 13.14 The records in the register shall be kept at the Licensee's premises for a period of not less than 6 calendar months from the date on which the retailer ceases to sell the Services of the Licensee.

14 Mobile Communications on Aircraft

Scope

- 14.1 The Licence enables the Licensee to operate Mobile Communications on Aircraft ("MCA") as defined in Condition 14.2 on aircraft registered in Singapore or in another country.
- 14.2 The MCA is provided by one or more pico cell Base Transceiver Station. The MCA is a part of the GSM system of a home terrestrial GSM network operator (hereinafter referred to as "a GSM network operator" or "the GSM network operator" as the case may be). All GSM-related functions such as authentication, call-routing, data retention, subscription information, etc. are controlled by the GSM network operator. The operation of MCA effectively extends the service coverage of the GSM network into the sky.

Registration of Subscribers

- 14.3 The Licensee shall not operate the MCA as a separate network from all other GSM networks. The Licensee shall not register users of the MCA as subscribers to a separate network.
- 14.4 The Licensee shall make arrangements with a GSM network operator under a roaming agreement to collect the service fees for the use of MCA. The service fees shall be charged through the user's mobile phone account with the GSM network operator.

Conditions of Operation

- 14.5 The Licensee shall ensure that the operation of MCA in Singapore airspace complies with the technical and operational requirements as prescribed in the Annex to the ECC Decision ECC/DEC(06)07¹³.
- 14.6 Unless specifically allowed otherwise by IDA, the Licensee shall only operate the MCA at a minimum height of 3000 metres above ground in Singapore airspace.

¹³ Electronic Communications Committee (ECC) Decision of 1 December 2006 on the harmonised use of airborne GSM systems in the frequency bands 1710-1785 and 1805-1880 MHz (ECC/DEC/(06)07).

- 14.7 The Licensee shall obtain separate approval from IDA before carrying out any installation and testing of MCA on the ground in Singapore.
- 14.8 The Licensee shall obtain all necessary approvals from the relevant authorities in Singapore for the operation of MCA within Singapore airspace.

Radio Frequency Spectrum Right

- 14.9 The Licensee shall not be accorded any Spectrum Right for the operation of MCA in GSM 1800 MHz frequency band viz. from frequency bands 1710 to 1785 MHz and from 1805 to 1880 MHz.
- 14.10 The operation of MCA in the GSM 1800 MHz frequency band shall be on a non-protection, non-interference and non-exclusive basis.

GUIDE TO INTERCONNECTION WITH DOMINANT LICENSEE

Scope of this Document

- 1.0 This document aims to provide guidance on some possible options that IP Telephony service providers issued with E.164 telephone numbers from IDA can connect to the Dominant Licensee. For the purposes of this document “**IP Telephony Providers**” are service providers who provide IP Telephony services to the public, and who are either Facilities-based licensees (“**FBOs**”) or Services-based licensees (“**SBOs**”) issued with E.164 telephone numbers from IDA.

Background

- 1.1 The Telecom Competition Code 2010 (“**Code**”) specifies the rights and duties of telecommunication licensees with respect to interconnection and access. Under section 5.2 of the Code, FBOs and SBOs are required to interconnect with each other. The interconnection framework specified in the Code generally deals with traditional circuit-switched telephone (“**CST**”) networks.
- 1.2 As IDA recognises that IP Telephony is a new and evolving technology, and IP Telephony Providers may employ various possible interconnection configurations¹⁴, it would not be appropriate for IDA to dictate the specific interconnection configurations that must be adopted at this stage. IDA will therefore allow IP Telephony Providers to pursue the most appropriate method of connection with the Dominant Licensee and/or other service providers.

¹⁴ IDA notes that several interconnection models could arise. These include (i) direct interconnection between IP Telephony networks; (ii) interconnection between an IP Telephony network and a CST network or Public Switched Telephone Network (“PSTN”); and (iii) interconnection between IP Telephony network providers via a CST network. IDA also notes that different methods exist for interconnection between an IP Telephony network and a CST network. These include the use of media translation gateways by IP Telephony Providers for conversion of IP Telephony traffic to CST traffic and vice versa, and interconnection using the H.323 or SIP protocol.

Options Available for Interconnection with Dominant Licensee

Option 1: ISDN Connection to Dominant Licensee's CST Network

- 1.3 At the simplest level, IP Telephony Providers may obtain commercial ISDN products to connect to the Dominant Licensee's CST network.
- 1.4 Typically, using the ISDN product to connect to the Dominant Licensee's CST, the IP Telephony provider would be able to enable calls to be made between customers of the IP Telephony network and the CST network using a media gateway. The media gateway, typically operated by the IP Telephony Provider as part of its network, enables calls between the IP Telephony network and the CST network by translating the different signaling coding protocol, communication procedures and transmission format used on the 2 networks.
- 1.5 Currently, ISDN products are readily available from various service providers such as Singapore Telecommunications Limited ("**SingTel**") or StarHub Limited.

Option 2: Reference Interconnection Offer

- 1.6 IP Telephony Providers, who are FBOs using 8-digit numbers starting with level "3" or "6" issued by IDA, may want to enable their customers to make and receive calls to and from customers connected to other networks, and provide their customers calling line identification (CLI) or emergency services, where applicable.
- 1.7 If IP Telephony Providers have their own access networks or last mile connections to their End Users ("**IP Telephony FBOs**"), they may choose to interconnect with the Dominant Licensee, SingTel, on terms specified in its Reference Interconnection Offer ("**RIO**"). A copy of SingTel's RIO can be downloaded from IDA's website at www.ida.gov.sg.

Option 3: Commercially Negotiated Interconnection Agreement

- 1.8 IP Telephony Providers, whether SBOs or FBOs, seeking interconnection with the Dominant Licensee may commercially negotiate an individualised interconnection agreement with the Dominant Licensee under section 6.4 of the Code.

- 1.9 If the Dominant Licensee and IP Telephony Providers fail to voluntarily reach agreement within 90 days on the individualised interconnection agreement, either Licensee may request IDA to resolve the dispute in accordance with sections 6.4.3 and 11.3 of the Code.
- 1.10 For example, for an IP Telephony Provider licensed as an SBO, who does not desire to connect to the Dominant Licensee's CST network using ISDN product and at the same time is not eligible to interconnect under the RIO, may commercially negotiate an individualised interconnection agreement with the Dominant Licensee. The individualised interconnection agreement must still comply with the minimum duties for interconnection agreements specified in Sub-sections 5.4 through 5.4.8 of the Code.
- 1.11 Where the parties fail to agree on any issues, to the extent that an issue in dispute is addressed by the price, terms and conditions of the Dominant Licensee's approved RIO; IDA will apply those provisions in resolving the dispute. For example, if the matter in dispute relates to the IP Telephony Provider's settlement arrangement for terminating an IP Telephony call on the Dominant Licensee's CST or PSTN network, if similar network elements are used, IDA would treat this as a termination call and apply the relevant RIO price, terms and conditions for settlement of such calls. To the extent that an issue in dispute is not addressed by the RIO, IDA retains full discretion to impose any solution that it deems appropriate. For example, if the matter in dispute relates to the Dominant Licensee's settlement arrangement with the IP Telephony Provider to terminate a CST or PSTN call on the IP Telephony network and as this is not covered under the RIO, IDA will need to examine the IP Telephony Provider's network configuration and determine the dispute on a case-by-case basis. IDA may use a Forward Looking Economic Cost methodology to determine the relevant interconnection costs, where these are payable.

Going Forward

- 1.12 In the long term, there are likely to be other possible interconnection configurations that IP Telephony Providers may deploy. As IP Telephony services continue to proliferate, direct interconnection between IP Telephony networks may become the dominant method of interconnection as opposed to interconnection with traditional CST networks. IDA will continue to monitor technological and market developments and consult the industry when it fine-

tunes and further develops the interconnection and access framework going forward.

**SCOPE AND SPECIFIC CONDITIONS FOR SERVICES
TO BE OFFERED UNDER THE
SERVICES-BASED OPERATOR (CLASS) LICENCE**

1. Call-back / Call Re-origination Services

Scope

- 1.1 Call-back and call re-origination services are International Direct Dial (“IDD”) call reversal service passing over any FBO’s international telephone gateway and public switched telecommunication network or local call reversal services passing over any FBO’s public switched telecommunication network. It does not include the carriage of voice and data traffic over frame-relay or through leased circuits. SBOs who wish to provide such services should apply for an SBO (Individual) Licence for the provision of International Simple Resale (ISR) services.

Specific Conditions

- 1.2 The Licensee is required to distinguish its services from IDD services provided by FBOs by including the term “call-back”, “call re-origination” or its equivalent in their marketing and promotion materials.
- 1.3 The Licensee must not route voice or data traffic or both over frame relay or through leased circuits.

2 Internet-Based Voice and Data Services

Scope

- 2.1 Internet based voice and data services are the carriage of voice and data services through the public Internet access facilities provided by licensed SBOs.

3. International Calling Card Services

Scope

- 3.1 The International Calling Card (“ICC”) services use PIN validation and call routing through a licensed FBO’s international telephone gateway to provide

IDD services. The SBO (Class) Licence for the ICC services does not include the carriage of voice and data traffic over frame-relay or through leased circuits. SBOs who wish to provide such services should apply for an SBO (Individual) Licence for the provision of International Simple Resale (ISR) services.

4. Resale of Public Switched Telecommunication Services

Scope

4.1 The telecommunication services specified in paragraph 4.1(A) may be resold under this class licence where they are provided through:

- a) an FBO who is licensed to provide public basic telecommunication services, public cellular mobile telephone services or public radio paging services; or
- b) an SBO who is licensed to provide international simple resale, mobile virtual network operation, Internet based voice and data services or call-back and call re-origination services.

(A) The telecommunication services referred to in paragraph 4.1 are the following public switched telecommunication services (whether domestic or international):

- (i) Public switched telephone services, other than public chain payphone services and services exempted from licensing under the Telecommunications (Exemption of Resellers of Local Calls Operating Coinafons or Payphones) Notification 2007;
- (ii) Public cellular mobile telephone services;
- (iii) Public radio paging services;
- (iv) Public switched message services;
- (v) Public switched data services; and
- (vi) Public integrated services digital network services.

Specific Conditions

4.2 The Licensee shall not engage in the construction or building of any telecommunication system.

- 4.3 Where the Licensee subscribes to any domestic or international leased circuit, it shall not, except with the prior approval of IDA provide its users with any direct or indirect connection to that leased circuit.
- 4.4 The Licensee shall market itself as a reseller of telecommunication services and not the provider of these services.
- 4.5 The Licensee shall list the rental of equipment charge and the usage charge separately in its bills to its users.
- 4.6 Where the Licensee provides the services through resale or shared use of PABX, the Licensee shall not restrict the occupants of the premises served by the PABX from subscribing to services or facilities directly from any FBO or SBO licensed by IDA.
- 4.7 The Licensee shall enter into a written service agreement with each of its users except users of an international payphone service provided by the Licensee in any single customer premises.

5. Store-and-Retrieve Value-Added Network Services

Scope

- 5.1 Store-and-retrieve (“S&R”) value-added network services comprises the following services provided by telecommunication systems, built over and above the telecommunication systems operated by an FBO and accessed through public telecommunication systems or leased circuits, which allow telecommunication traffic between a user and the value-added network or between users.
 - (a) On-line information and database retrieval services;
 - (b) On-line information and data processing services;
 - (c) Voice information services;
 - (d) Electronic broking services;
 - (e) Transaction services such as on-line shopping, on-line reservation service, etc;
 - (f) Remote computing services;
 - (g) On-line games;
 - (h) Mailbox services including e-mailbox, voice-mailbox, facsimile-mailbox and multimedia mailbox;
 - (i) Electronic data interchange services;
 - (j) Store-and-retrieve file transfer services;
 - (k) Electronic chatting services;

- (l) Bulletin board services; and
- (m) Other multimedia services where the content or format of the telecommunication traffic is changed or processed.

Specific Conditions

- 5.2 A party registered for the Licence (or Licensee) shall ensure that no store-and-forward value-added network telecommunication traffic is carried through its value-added network. The Licensee shall not, except with the prior approval of IDA provide value-added network services of another value-added network through a leased circuit connecting its value-added network to the other value-added network.
- 5.3 In the event that the Licensee decides to terminate its value-added network services, it must notify IDA in writing regarding its intent in advance.
- 5.4 The licensee must publish its name as registered with the Accounting and Corporate Regulatory Authority in any advertisement of its services.

6 Audiotex Services

Scope

- 6.1 Audiotex services are telecommunication systems and services which enable a caller, by dialling a designated telephone number beginning with “1900”, to receive a recorded announcement or to interact with a programme whereby he/she may communicate, by means of a dual-tone multi-frequency telephone key pad, a touch-tone telephone or other similar device, with a value-added network connected to the public switched telephone system for the purposes of sending or receiving information.

Specific Conditions

- 6.2 Access to the Audiotex services by users shall be through the public switched network.
- 6.3 The Licensee shall ensure that all announcements and programmes on the Audiotex services are pre-recorded and stored in the Audiotex system and shall not enable callers to communicate directly in real-time with other callers.
- 6.4 The Licensee shall comply with the following transmission standards:

- (a) There shall be no delay in starting the announcement or programme when a call is connected.
 - (b) Each Audiotex service shall be assigned a different telephone number.
 - (c) There shall be no interruption during the announcement or programme.
 - (d) Each call shall be for a maximum period of 10 minutes with an option for the caller to extend his/her call.
 - (e) Where callers are required to enter a unique code to access the Audiotex services, such codes shall be made available to the public either in lists published by the Licensee or through a telephone answering line available for enquiries 24 hours a day, the number for which shall be published in all advertisements for the Audiotex services.
- 6.5 The Licensee shall ensure that the number of attempted calls at any time does not significantly exceed the number of call-in lines for the Audiotex services and, if IDA determines that additional lines are required to adequately handle calls for the Audiotex services and to prevent congestion to other users of the public switched telephone system, the Licensee shall subscribe for such number of additional lines as IDA may direct.
- 6.6 The Licensee shall not, except with the prior approval of IDA, organise any mass calling event which will generate a high influx of calls to its Audiotex system.
- 6.7 The Licensee shall ensure that its current call charging rate is published in all advertisements for the Audiotex services and announced via a pre-recorded charge announcement played immediately after every call is connected.
- 6.8 The Licensee shall provide a grace period during which callers are not charged, either:
- (a) the first 6 seconds of a call where the charge announcement lasts 4 seconds; or
 - (b) the first 12 seconds of a call where the charge announcement lasts 10 seconds
- 6.9 The Licensee shall not claim any propriety right to any telephone number assigned to it.
- 6.10 In the event that the Licensee decides to terminate its Audiotex services, it must notify IDA in writing regarding its intent in advance.
- 6.11 The licensee must publish its name as registered with the Accounting and Corporate Regulatory Authority in any advertisement of its services.

7 Public Chain Payphone Services

Scope

- 7.1 Public chain payphone services are the provision of payphone services in multiple customer premises through the resale of public switched telephone services but do not include services exempted from licensing under the Telecommunications (Exemption of Resellers of Local Calls Operating Coinafons or Payphones) Notification 2007.

Specific Conditions

- 7.2 The Licensee must not, except with the approval of the IDA, engage in the construction or building of any telecommunication system.
- 7.3 Where the Licensee subscribes to any domestic or international leased circuits, it must not, except with the approval of the IDA, provide its users with any direct or indirect connection to that leased circuit.
- 7.4 The Licensee must market itself as a reseller of telecommunication services.
- 7.5 The Licensee must not charge its users a usage rate higher than the published rate for an equivalent or a similar service provided by the FBO or SBO through which it provides its services.
- 7.6 Notwithstanding paragraph 8.5, the Licensee may charge a maximum set-up charge of 30 cents for every successful IDD call and 10 cents for every successful subscriber trunk dialling (“STD”) call.
- 7.7 The Licensee must comply with the coverage obligations as may, from time to time, be set by the IDA for public chain payphone operations.
- 7.8 The Licensee must comply with such quality of service requirements as may, from time to time, be determined by the IDA.
- 7.9 The Licensee must comply with such equal access requirements as may, from time to time, be determined by the IDA.
- 7.10 The Licensee may only resell the services of the following:
- i) an FBO who is licensed to provide public basic telecommunication services, public cellular mobile telephone services or public radio paging services; or

- ii) an SBO who is licensed to provide international simple resale, mobile virtual network operation, international calling card service, internet based voice and data services or call-back and call re-origination services, and not those of any other licensee.

8 Store-and-Forward Value-Added Network Services

Scope

- 8.1 The store-and-forward value-added network services are the services specified in paragraph 8.2 which have a value-added function at one end (such as, the originating end) and are provided only on a call-by-call basis.
- 8.2 The store-and-forward value-added network services¹⁵ referred to in paragraph 8.1 are any or both of the following:
- (a) value-added data services being packet switched data services which convey end-to-end non-voice traffic by providing the value-added function of code and protocol conversion; or
 - (b) value-added messaging services being value-added store-and-forward electronic-messaging service, value-added store-and-forward facsimile, value-added store-and-forward telex (excluding telegram) services and value-added store-and-forward voice mail services, that provide one or more of the following value-added store-and-forward functions on a non real-time basis¹⁶:
 - (i) deferred delivery;
 - (ii) multi-addressing;
 - (iii) content conversion;
 - (iv) format conversion, such as conversion from text-to-fax, text-to-telex, text- to-voice, fax-to-telex, fax-to-voice, telex-to-voice or vice versa ;
 - (v) processing of control information (e.g. destination address) with or without modification to the content; or

¹⁵ Examples of S&F VAN services are:

- a) Value-added data services via dial-up access, e.g., protocol conversion between asynchronous and X.25, and value-added data services provided via leased line access subject to justification of users.
- c) X.400 based interpersonal messaging service with at least one value-added function listed in paragraph 6.1(b).

¹⁶ These value-added functions exclude those that are performed solely for the inherent benefit of the network. An example of exclusion is any protocol conversion that is performed automatically in order to establish the call through the network which results in the same type of protocol being provided at both ends of the call.

- (vi) any other conversion that provides the users with additional, different or restructured information.

Specific Conditions

- 8.3 A licensee shall ensure that the value-added function is to be provided on a call-by-call basis.
- 8.4 In the event that a licensee decides to terminate its value-added network services, it must notify the Authority in writing of its intent.
- 8.5 A licensee must provide the store-and-forward value-added network services through -
 - (a) a service node in Singapore and, whenever requested by the Authority, make available the information on the routing table, subscriber database, call traffic statistics and other records maintained by the service node for inspection by the Authority; or
 - (b) a local access node which is connected to the public switched telecommunication networks provided by a FBO.