



Information Paper:

Charging Regime for Origination, Termination and Transit Services in a multi-operator environment

(Revised - December 2001)

INFOCOMM DEVELOPMENT AUTHORITY OF SINGAPORE

TABLE OF CONTENTS

	<u>Page</u>	
1	PURPOSE OF THE PAPER	1
2	IDA'S REGULATORY APPROACH	2
	2.1 The Telecom Competition Code	2
	2.2 Origination Service	2
	2.3 Termination Services	3
3	OTHER INTERCONNECTION SCENARIOS	4

CHARGING REGIME FOR ORIGINATION, TERMINATION AND TRANSIT SERVICES IN A MULTI-OPERATOR ENVIRONMENT

1 PURPOSE OF THIS PAPER

- 1.1 The Telecom Competition Code ("Code") covers the charging regime for Origination, Termination and Transit ("O/T/T") services in two sections. Appendix One, Section 3.2.1 of the Code states that *"Transit Charges must be paid by the Licensee that originates the traffic, regardless of the payment flows between End Users and Licensees. A Dominant licensee that acts as the transit Licensee need not be a party to the commercial negotiations between the interconnecting Licensees."* Appendix Two, Section 3.2 of the Code states that *"In the case of transit traffic, the Dominant Licensee may require the Licensee originating the call to pay the Dominant Licensee for the cost of transit, irrespective of the type of traffic and payment between the End User and the 2 Non-dominant Licensees that are using the transit service."*
- 1.2 From the above Code provisions, the Code expressly addresses the charging regime for scenarios where Dominant Licensees are involved. The Code currently does not expressly detail other possible scenarios, in particular those involving Non-Dominant Licensees. For example, the Code does not cover the responsibility of transit service charges between two Non-Dominant Licensees transiting via a third Non-Dominant Licensee or the relationship between two Non-Dominant Licensees whose traffic transits through a Dominant Licensee.
- 1.3 Since the release of the Code, IDA has received a number of requests from the industry for guidance and clarification on the charging arrangements between Non-Dominant Licensees. Therefore, the purpose of this information paper is to give some guidance on IDA's approach towards the charging regime for O/T/T services between Non-Dominant Licensees.

2 IDA'S REGULATORY APPROACH

2.1 The Telecom Competition Code ("Code")

2.1.1 The Code states that a Licensee that originates traffic to a Dominant Licensee, who is the transit operator, must pay transit charges. The Code does not state who should ultimately bear the transit charge, i.e. whether it should be the originating party or terminating party between Non-Dominant Licensees.

2.2 Origination Services

2.2.1 The diagram below shows a situation where a customer of a Non-Dominant FBO interconnects with a Dominant Licensee to access the 15xx service of an SBO who is also interconnected with the Dominant Licensee.

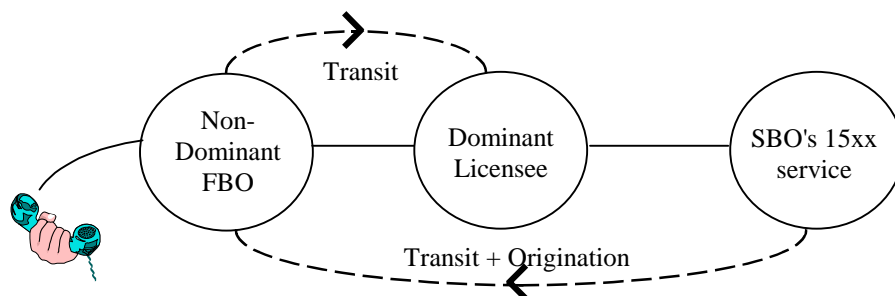


Figure 1 : customer of FBO calls SBO's 15xx service

2.2.2 According to the Code, the Non-Dominant FBO pays a transit charge to the Dominant Licensee as the call is originated from its network. The Code, however, does not mention whether the Non-Dominant FBO can recover the transit charge, including the origination charge, from the SBO. While IDA will leave both parties to commercially agree on the payment arrangement, in the event that a dispute is raised to IDA for conciliation, IDA is of the view that the SBO should bear both the origination and transit charges. This is based on the cost causality principle, as the arrangement is to enable a customer of the Non-Dominant FBO to access a service provided by the SBO. Similarly, this principle should also apply if a Non-Dominant Licensee is the transit operator.

2.3 Termination Services

2.3.1 The regulatory principles behind call origination services are similarly extended to scenarios involving call termination. For example, where a customer of Mobile Operator 1 calls another customer of Mobile Operator 2 and the call transits through both a Non-Dominant Licensee and a Dominant Licensee as shown below:

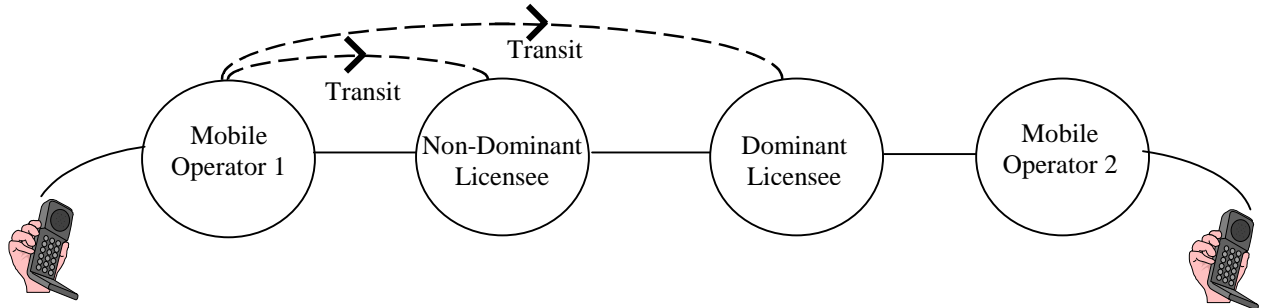


Figure 2 : Customer of Mobile Operator 1 calls Mobile Operator 2 transiting through FBO1 and SingTel networks

2.3.2 For such a scenario, Mobile Operator 1 should bear the transit charges payable to both the Non-Dominant Licensee and the Dominant Licensee. However, as Singapore currently operates on a Mobile Party Pays (“MPP”) charging regime, Mobile Operator 1 need not pay a termination charge to Mobile Operator 2.

3 OTHER INTERCONNECTION SCENARIOS

- 3.1 IDA has identified a list of possible interconnection scenarios between Non-Dominant and Dominant Licensees (where applicable) and which party should bear the interconnection charges payable for these scenarios. This list, which is by no means exhaustive, is as follows:

Origination & Transit Scenarios

- (1) Customer of Non-Dominant FBO calls Dominant FBO's IDD service;
- (2) Customer of Non-Dominant FBO calls SBO's 15xx service transiting through Dominant FBO's network;
- (3) Customer of Non-Dominant FBO1 calls the 1800 Service which Non-Dominant FBO2 purchases from Dominant FBO;
- (4) Customer of Non-Dominant FBO1 calls Non-Dominant FBO2's 1800 service;
- (5) Customer of Mobile Operator calls SBO's 15xx service transiting through Dominant FBO's network;
- (6) Customer of Non-Dominant FBO1 calls SBO's 15xx service transiting through Non-Dominant FBO2's network;
- (7) Customer of Mobile Operator calls SBO's 15xx service transiting through Non-Dominant FBO's network;
- (8) Customer of Mobile Operator calls Dominant FBO's IDD service;
- (9) Customer of Mobile Operator calls SBO's 15xx service transiting through Non-Dominant FBO and Dominant FBO;

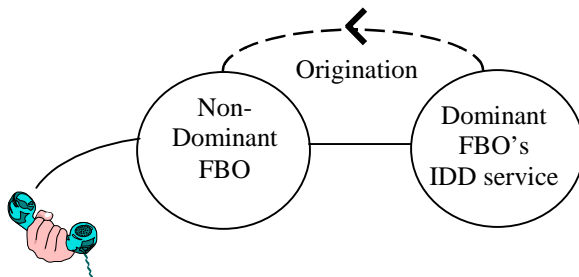
Termination & Transit Scenarios

- (10) Customer of Non-Dominant FBO1 calls Non-Dominant FBO2 transiting through Dominant FBO;
- (11) Customer of Non-Dominant FBO calls Mobile Operator transiting through Dominant FBO;
- (12) Customer of Mobile Operator calls Non-Dominant FBO;
- (13) Customer of Mobile Operator calls Dominant FBO's network transiting through Non-Dominant FBO;
- (14) Customer of Mobile Operator 1 calls Mobile Operator 2 transiting through Non-Dominant FBO;
- (15) Customer of Mobile Operator 1 calls Mobile Operator 2 transiting through Non-Dominant FBO and Dominant FBO;
- (16) Customer of Mobile Operator calls Non-Dominant FBO2 transiting through Non-Dominant FBO1 and Dominant FBO;

Note: A Non-Dominant FBO stated in the scenarios usually refers to a non-dominant fixed network operator.

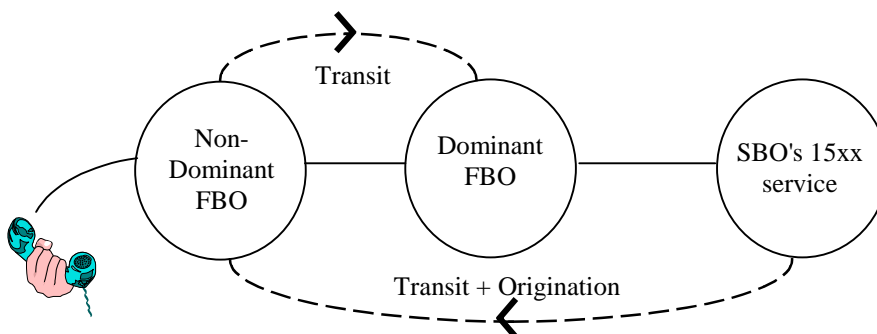
ORIGINATION & TRANSIT SCENARIOS

Scenario 1 : Customer of Non-Dominant FBO calls Dominant FBO's IDD service



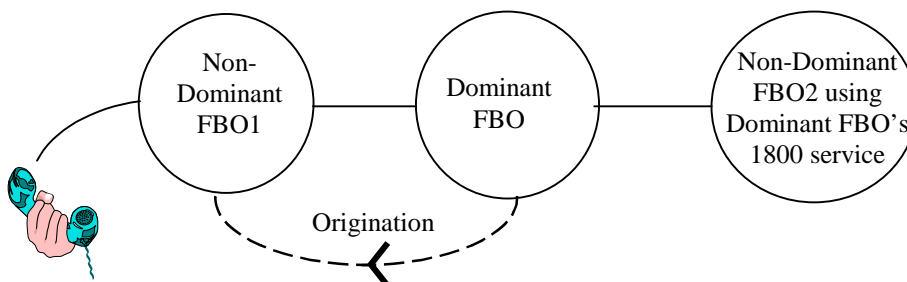
Responsibility for Charges: Dominant FBO will have to pay the Non-Dominant FBO an origination charge.

Scenario 2: Customer of Non-Dominant FBO calls SBO's 15xx service transiting through Dominant FBO's network



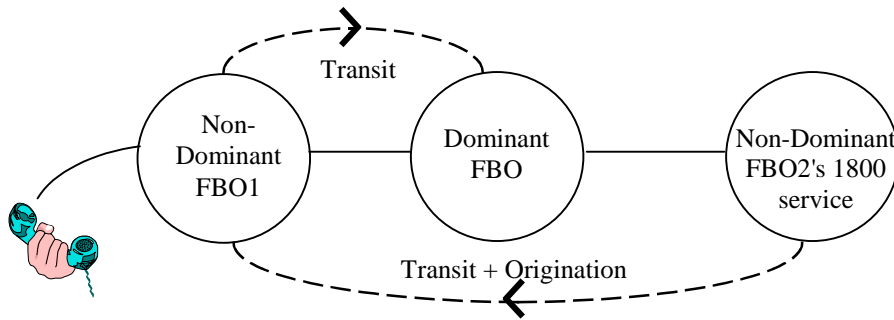
Responsibility for Charges: The Non-Dominant FBO will have to pay the Dominant FBO a transit charge. The Non-Dominant FBO may, however, recover the transit charge from the SBO, in addition to an origination charge, since the service is ultimately provided by the SBO.

Scenario 3 : A customer of Non-Dominant FBO1 calls the 1800 service which Non-Dominant FBO2 purchases from Dominant FBO



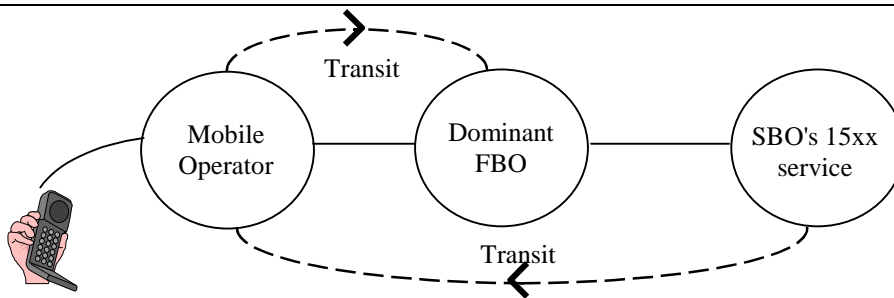
Responsibility for Charges: The Dominant Licensee will have to pay Non-Dominant FBO1 an origination charge.

Scenario 4 : Customer of Non-Dominant FBO1 calls Non-Dominant FBO2's 1800 service



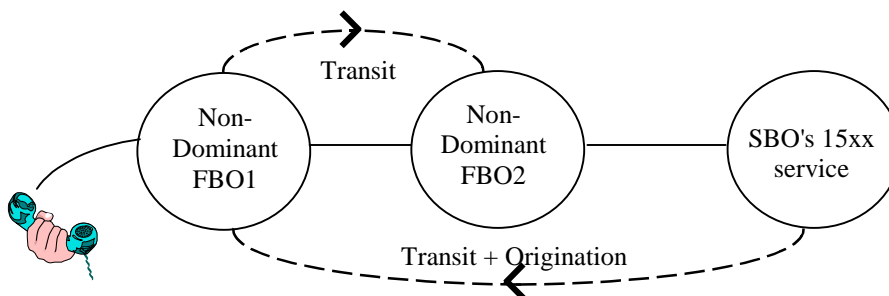
Responsibility for Charges: Non-Dominant FBO1 will have to pay the Dominant FBO a transit charge. Non-Dominant FBO1 may, however, recover the transit charge, in addition to an origination charge, from Non-Dominant FBO2, since the service is ultimately provided by Non-Dominant FBO2.

Scenario 5 : A customer of Mobile Operator calls SBO's 15xx service transiting through Dominant FBO's network



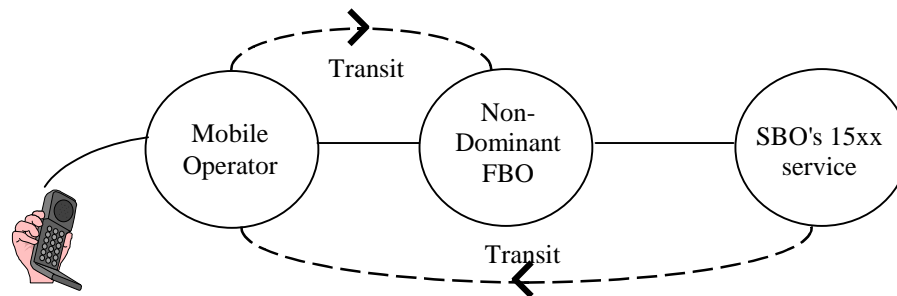
Responsibility for Charges: The Mobile Operator will have to pay Dominant FBO a transit charge. Mobile Operator may, however, recover the transit charge from the SBO since the service is ultimately provided by the SBO. No origination charge needs to be paid by the SBO to the Mobile Operator because of the current Mobile-Party-Pays (MPP) regime for Fixed-Mobile Interconnection.

Scenario 6 : Customer of Non-Dominant FBO1 calls SBO's 15xx service transiting through Non-Dominant FBO2's network



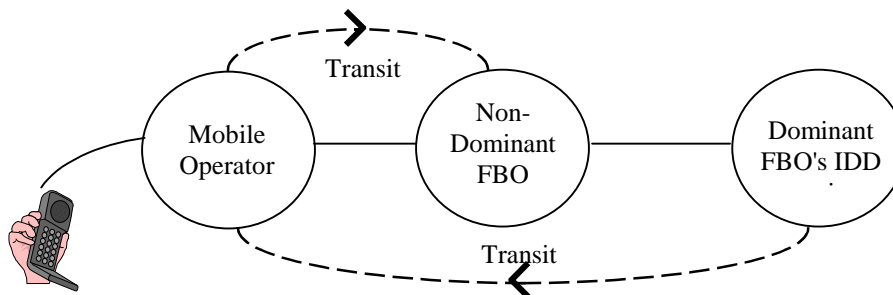
Responsibility for Charges: Non-Dominant FBO1 will have to pay Non-Dominant FBO2 a transit charge. Non-Dominant FBO1 may however recover the transit charge, in addition to an origination charge, from the SBO since the service is ultimately provided by the SBO.

Scenario 7 : Customer of Mobile Operator calls SBO's 15xx service transiting through Non-Dominant FBO's network



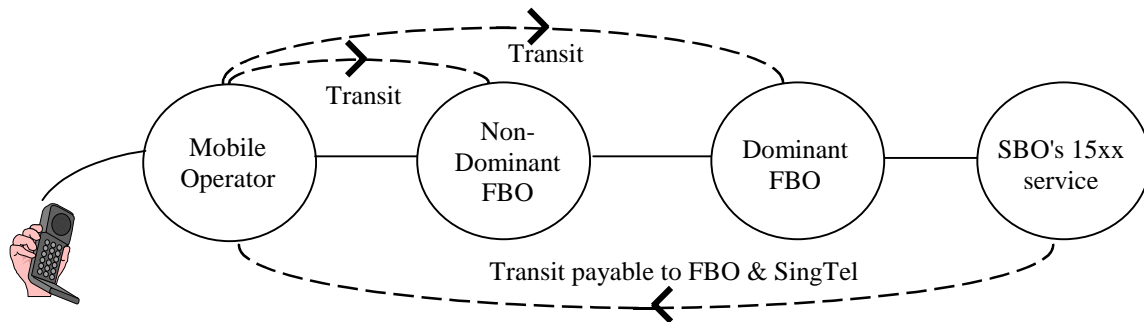
Responsibility for Charges: The Mobile Operator will have to pay the Non-Dominant FBO a transit charge. The Mobile Operator may, however, recover the transit charge from the SBO since the service is ultimately provided by the SBO. No origination charge needs to be paid by the SBO to the Mobile Operator because of the current Mobile-Party-Pays (MPP) regime for Fixed-Mobile Interconnection.

Scenario 8 : Customer of Mobile Operator calls Dominant FBO's IDD service



Responsibility for Charges: The Mobile Operator will have to pay the Non-Dominant FBO a transit charge. The Mobile Operator may, however, recover the transit charge from the Dominant FBO since the service is ultimately provided by the Dominant FBO. No origination charge needs to be paid by the Dominant FBO to the Mobile Operator because of the current MPP regime for Fixed-Mobile Interconnection.

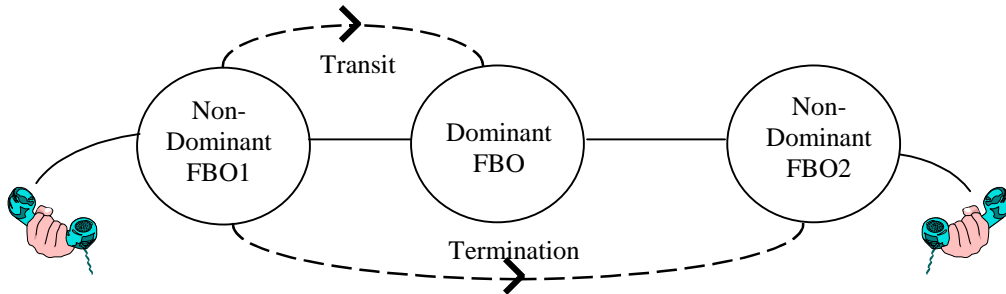
Scenario 9 : Customer of Mobile Operator calls SBO's 15xx service transiting through Non-Dominant FBO and Dominant FBO



Responsibility for Charges: The Mobile Operator will have to pay transit charges to both the Non-Dominant FBO and the Dominant FBO. The Mobile Operator may, however, recover both transit charges from the SBO since the service is ultimately provided by the SBO. No origination charge needs to be paid by the SBO to the Mobile Operator because of the current MPP regime for Fixed-Mobile Interconnection.

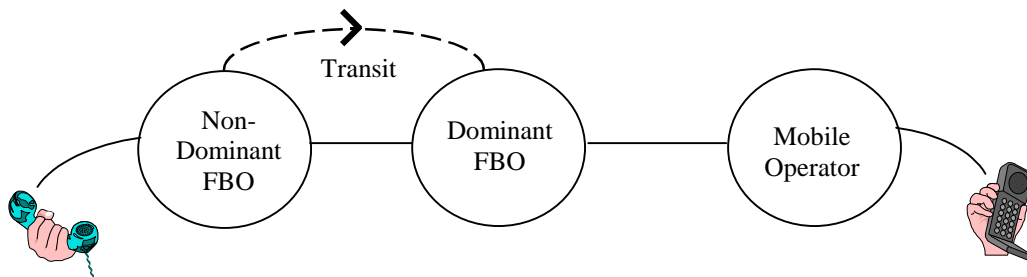
TERMINATION & TRANSIT SCENARIOS

Scenario 10 : Customer of Non-Dominant FBO1 calls Non-Dominant FBO2 transiting through Dominant FBO



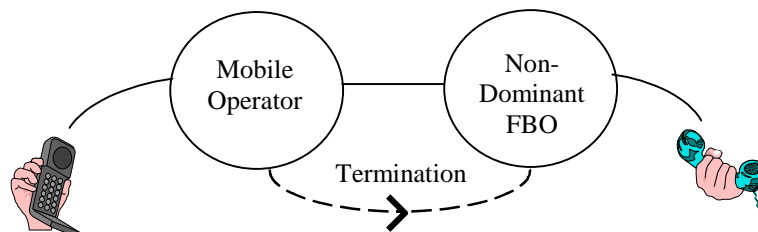
Responsibility for Charges: Non-Dominant FBO1 will have to pay the Dominant FBO a transit charge and a termination charge to Non-Dominant FBO2.

Scenario 11 : Customer of Non-Dominant FBO calls Mobile Operator transiting through Dominant FBO



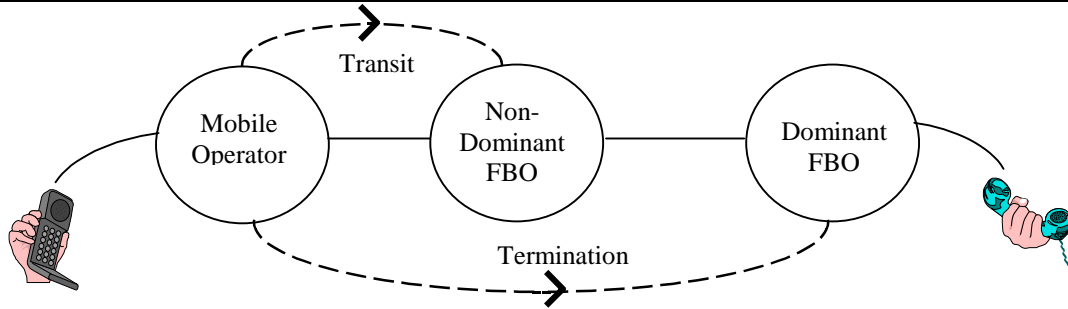
Responsibility for Charges: The Non-Dominant FBO will have to pay the Dominant FBO a transit charge. No termination charge needs to be paid by the SBO to the Mobile Operator because of the current MPP regime for Fixed-Mobile Interconnection.

Scenario 12 : Customer of Mobile Operator calls Non-Dominant FBO



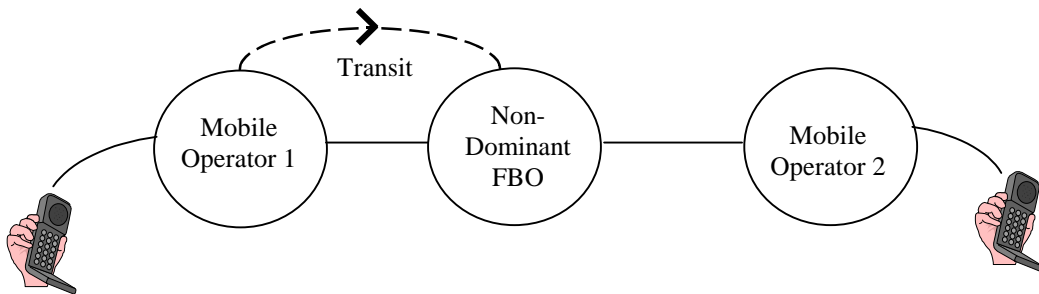
Responsibility for Charges: The Mobile Operator will have to pay a termination charge to the Non-Dominant FBO.

Scenario 13 : Customer of Mobile Operator calls Dominant FBO's network transiting through Non-Dominant FBO



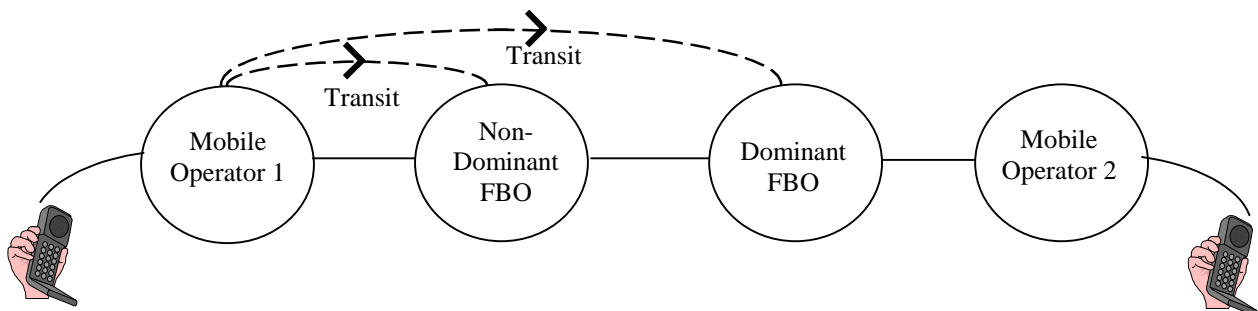
Responsibility for Charges: The Mobile Operator will have to pay a transit charge to the Non-Dominant FBO and a termination charge to the Dominant FBO.

Scenario 14 : Customer of Mobile Operator 1 calls Mobile Operator 2 transiting through Non-Dominant FBO



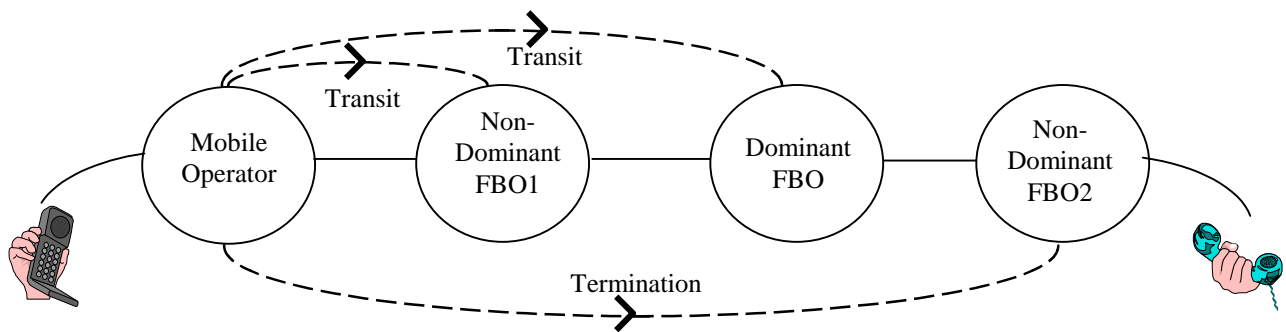
Responsibility for Charges: Mobile Operator 1 will have to pay a transit charge to the Non-Dominant FBO. No termination charge needs to be paid to Mobile Operator 2 because of the current MPP regime for Fixed-Mobile Interconnection.

Scenario 15 : Customer of Mobile Operator 1 calls Mobile Operator 2 transiting through Non-Dominant FBO and Dominant FBO



Responsibility for Charges: Mobile Operator 1 will have to pay transit charges to both the Non-Dominant FBO and the Dominant FBO. No termination charge needs to be paid to Mobile Operator 2 because of the current MPP regime for Fixed-Mobile Interconnection.

Scenario 16 : Customer of Mobile Operator calls Non-Dominant FBO 2 transiting through Non-Dominant FBO1 and Dominant FBO



Responsibility for Charges: The Mobile Operator will have to pay transit charges to both Non-Dominant FBO1 and the Dominant FBO. In addition, a termination charge will have to be paid to Non-Dominant FBO2.