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CHAPTER 1: INTRODUCTION

- 1.0 In keeping with the provisions of the Telecommunications Act, 2000 Cable & Wireless Jamaica (C&WJ) submitted a Reference Interconnect Offer to the Office of Utilities Regulation on March 30, 2000. In July 2000 certain modifications to the RIO were made by C&WJ and these were filed with the Office. The Reference Interconnect Offer (RIO) stipulates the terms and conditions under which C&WJ proposed to permit interconnection to its telecommunications networks.
- 1.1 Interconnection is defined in the Telecommunications Act as the physical or logical connection of public voice networks of different carriers. This means that during Phase I interconnection relates specifically to the activities of the incumbent voice carrier and the two new mobile entrants. A connection with a public voice network for the purpose of the wholesaling or retailing of a service is not considered as interconnection.
- 1.2 The Office of Utilities Regulation is mandated by the Telecommunications Act 2000, to regulate interconnection. Annex A provides a detailed description of the regulatory framework for interconnection of public voice networks. The Act also provides for the OUR to arbitrate pre-contract interconnection and wholesale disputes, in line with the rules established for such purposes. A set of proposed rules for arbitrating pre-contract disputes are provided in Annex B of this determination. Interested parties are invited to submit comments on the proposed rules by April 2, 2001. It is expected that respondents will bring to the attention of the Office information relevant to the proposed dispute mechanism, indicate areas of disagreements, set out reasons for any such disagreements and highlight relevant issues that the Office has failed to include or consider. Only written comments will be considered, and these should be sent to the address below.

Winston C. Hay
Director General
Office of Utilities Regulation
3rd Floor, PCJ Resource Centre
36 Trafalgar Road
Kingston

- 1.3 In this determination notice, the Office has set out its final position on the critical aspects of Cable & Wireless Jamaica's Reference Interconnect Offer (RIO). It should be noted that the Office has not issued a determination on all aspects of the RIO. In some instances, the Office has simply indicated its preferred position. It is anticipated that in the instances in which determinations have been issued by the Office, C&WJ will ensure that its revised RIO is consistent with such determinations. The Office has set March 14, 2001 as the target date for approving the ensuing RIO, once it is consistent with the terms of this determination document.

Determination 1.1: C&WJ is to submit a revised version of the RIO in accordance with the determinations as set out in this document. The deadline for submitting the revised RIO to the Office is March 7, 2001.

- 1.4 On February 9, 2001, the Office issued an advance notice on interconnection charges and fixed to mobile retail prices. Following the publication of that notice, interested parties sought clarification from the Office on matters contained in the advance notice. In Chapter 5 of this determination the Office clarifies its determination on certain pricing and costing issues.

Public Consultation

- 1.5 Interconnection raises very complex engineering, operational and financial questions. For example, costs change over time, so charges need to be subject to periodic review. The RIO produced by C&WJ is designed for the terms of interconnection with domestic mobile carriers. This is appropriate for Phase I, but not for Phases II and III. Phase II offers the prospects of further new network entrants with domestic fixed networks. Full liberalisation can occur in Phase III, which envisages the opening up of international facilities to competition. Thus, in making a final determination on the various aspects of Cable & Wireless Jamaica's RIO, the Office was mindful of the fact that interconnection is a process and not a one-off exercise.
- 1.6 The Office has sought and has received comments from interested parties on the proposed terms and conditions set out in the RIO. Various meetings were held between the OUR/Strategic Policy Research and interested parties. In November 2000, consultants engaged by the Office, Strategic Policy Research, presented their preliminary findings to the Office and representatives of Cable & Wireless Jamaica, Mossel (now Digicel) and Centennial Digital Jamaica Limited. Following this meeting, the parties were asked to provide responses to the preliminary findings of the consultants. In December 2000 the Office issued a Consultative Document "*Assessment of Cable & Wireless Jamaica's Reference Interconnect Offer*" setting out its preliminary positions on various components of the RIO as well as seeking comments from interested parties on such issues as:-
- duration and modification of RIO and Interconnect Agreements;
 - interconnect Switch Locations
 - interconnect Services
 - interconnect Charges

- other interconnect issues

1.7 The Office received responses from the Fair Trading Commission, Cable & Wireless Jamaica Limited, and Digicel.¹ In January 2001, a two-day workshop was organised by the Office to allow for discussions amongst interested parties. The Office also invited participants from the US Federal Communications Commission, a US State regulator and a staff member from the UK's telecom regulatory body, Oftel. The workshops proved to be a useful forum for advancing the discussion on the RIO.

¹ Copies of these comments are available upon request.

CHAPTER 2: MODIFICATION OF RIO AND INTERCONNECT AGREEMENTS

Introduction

2.0 The process of interconnection requires both the submission of a RIO (by the incumbent or by a dominant carrier) and the conclusion of interconnect agreements between carriers. The RIO is an offer document "...setting out matters relating to the price and terms and conditions under which a public voice carrier will permit interconnection to its public voice network."² Interconnect agreements, on the other hand, represent specific contractual agreements arrived at between carriers for interconnection. The process for securing interconnection agreements contemplates commercial negotiation between both parties (and, if necessary, arbitration by the Office). Notably, interconnection agreements could include matter that are not covered in an applicable RIO.

Duration and Modification of RIOs

2.1 The RIO produced by C&WJ specifies terms and conditions for interconnection with domestic mobile carriers. As noted in the OUR's consultative document (December 2000), this is appropriate for Phase I, but not for Phases II or III. Phase II contemplates the entry of competing domestic fixed networks. Full liberalisation can occur in Phase III, in particular with inter alia the opening up of international facilities to competition.

2.2 Given the statutory timeframe, the Office believes there is a strong case for setting initial charges for a relatively short period. The quality and robustness of the cost information on which some of the charges are based will improve over time as costing systems are refined and made more reliable. Since costs change over time,³ charges will need to be subject to periodic review (as C&WJ recognised in its paper to the OUR of May 3). Furthermore, the system of accounts from which C&WJ has derived its proposed charges is quite new and typically, the development and refinement of accounting systems (or other costing models) is a process and not a one-off exercise.

Determination 2.1: The revised RIO should provide for automatic modification under the following conditions:-

- **when fixed-fixed interconnection (Phase II) and international network interconnection (Phase III) is allowed.**
- **where there are significant changes to licence conditions, company constitution, legislation, and where there are decisions of the court which necessitate such modifications.**
- **where the parties affected by the RIO agree on the need for change and request that the Office conducts such a review.**
- **at the initiative of the OUR.**

² Section 27 of Telecommunications Act.

³ See, for example, the significant change in BT's costs between 1995/6 and 1998/9, reported in Tables 6.1 and 6.2 of Chapter 6 of December 2000 Consultative Document "*Assessment of Cable & Wireless Jamaica's Reference Interconnect Offer*". The reduction in nominal terms is at least 30% over this three-year period (so the reduction in real terms is even larger).

Duration and Modification of Interconnect Agreements

2.3 The duration and the terms of termination of the proposed interconnection agreement are set out by C&WJ in the section of the RIO titled, the Legal Framework:-

“24.1 This Agreement takes effect on the Effective Date and continues in full force and effect unless terminated in accordance with this Clause and Clause 25 [Severability and Termination for Default].

24.2 Either Party may terminate this Agreement:

- a) by at least nine months notice in writing to the other Party, to expire at the end of any such initial or subsequent five year period or on the date of expiry of the Licence; or
- b) immediately on notice in writing to the other Party, in the event that its Licence is at any time revoked by the Minister of Industry, Commerce and Technology in accordance with the laws of Jamaica.”

2.4 C&WJ proposes no automatic date of termination for interconnection agreements. Unless terminated on notice in writing by one of the parties, the agreement would continue in perpetuity. Even when exercising the right to give notice, the agreement may only be terminated at five-year intervals (except in case of default or licence expiry or licence revocation). If one of the mobile entrants was to terminate the agreement at points other than at the end of the five year periods, it would be required to make a financial payment:-

“If Mobile Telco terminates the contract other than for cause pursuant to Clause 25.1, it agrees to pay an early termination charge equal to the average total monthly recurring charges paid during the twelve months immediately preceding the termination multiplied by the number of months remaining on the term of the agreement....”

[Extract from 24.3 of the Legal Framework]

2.5 C&WJ's justification for the five-year interval and financial penalty for early termination is that the interconnection charges were formulated to recover certain investments and one-time expenses, over a five-year period. It argues that the early termination charge is not a penalty, but a mechanism to provide full compensation to C&WJ for its costs of providing interconnection services.

2.6 The Act only provides for the Office to arbitrate *pre*-contract interconnection disputes. Section 31 of the Legal Framework in the RIO allows for post-contract disputes to be resolved through private, binding arbitration. The Office recognises that it would not always be the most appropriate organisation to resolve disputes, such as routine or detailed commercial issues. However, a potential difficulty with C&WJ's proposals is that once initial interconnection

agreements are arrived at and unless a termination clause is triggered, there would be no further role for the Office in settling interconnection disputes.

2.7 In the RIO, C&WJ proposes that it may amend the agreement at any time:

“Subject to the provisions of the Telecommunications Act, CWJ reserves the right to amend the terms of this Agreement at any time.” [Extract from 23.1 of Legal Framework]

2.8 The interconnection agreement proposed in the RIO relates to the services to be provided by the mobile entrants to C&WJ as well as vice versa (e.g. reciprocal arrangements are proposed for mobile call termination). However, nowhere in the proposed agreement is there provision for modifications to be made to the terms of the agreement by the mobile entrants. The Office considers the proposed asymmetry in the ability to modify the agreement to be unreasonable.

2.9 The Office, is of the view that the initial interconnect agreements should not last too long, because much will be learned from experience about the most effective and efficient interconnection arrangements and the quality and robustness of the cost information on which they are based will improve over time as costing systems are refined and made more reliable.

Determination 2.2: All interconnect agreements should include an expressed provision for modifications to take account of changes made to the RIO.

CHAPTER 3: INTERCONNECT SWITCH LOCATIONS

Introduction

3.0 The proposal set out in the RIO is for mobile entrants to connect to two tandem switches in each Interconnect Access Area (IAA). For purposes of interconnection the island is divided into four IAAs, namely: Kingston, St. Ann's Bay, Mandeville, and Montego Bay. The Table below sets out the locations of C&WJ's switches in each IAA.

Table 3.1: Points of Interconnection

<i>IAA</i>	<i>Interconnect Switch Locations</i>
Kingston	Central & Carlton
St. Ann's Bay	St. Ann's Bay & Ocho Rios
Mandeville	Mandeville & May Pen
Montego Bay	Montego Bay & Rosehall

3.1 Each mobile entrant is only allowed to have one Point of Interface in each region. Direct connection to C&WJ's end offices is not provided for. Neither are mobile entrants allowed to connect directly to C&WJ's mobile network. This means that calls between mobile operators must traverse the terrestrial switched network. All interconnecting trunks are to be uni-directional, and mobile entrants are not allowed to connect directly to C&WJ's international network. The Office considers these policies to be excessively restrictive in some instances.

Connection to Two C&WJ Switches in each Interconnect Access Area

3.2 C&WJ justifies this proposal on the grounds that redundancy is necessary to maintain adequate reliability levels. The Office is of the view that this objective might not justify the policy. In any event, C&WJ has advised that the two switches in each IAA are fully paired, i.e. any destination can be reached via either switch. With such an arrangement it is possible for the two trunk groups to be dimensioned as if they were one, with full overflow capability between them. Under these circumstances, there is no additional cost to the entrant over a single trunk group.

Determination 3.1: The Office will go along with this proposal, so long as, the two interconnecting trunk groups are dimensioned as if they were a single group with traffic overflowing between them.

Single Point of Interface in each Region

- 3.3 As a general rule, interconnecting carriers that have more than one switch in a region, should be allowed to connect any number of them directly to the C&WJ's network. This is a more efficient arrangement, since it eliminates the need for calls to traverse multiple switches within the connecting carrier's network. It does, of course, complicate routing and forecasting for the connecting carrier, but it should be left up to the interconnecting seeker and not the interconnecting provider, to decide how its switches are to be connected to the terrestrial network. As a practical matter, during Phase I of the interconnection regime, it is most unlikely that any carrier will have more than one switch in a region.

Determination 3.2: The Office's determination is that if a carrier wishes to connect two switches to the C&WJ's tandems, it should be allowed to do so as of the date of acceptance of the RIO. At the commencement of Phase II, entrants shall be able to connect any and all of their switches to C&WJ's network. Furthermore, the mobile carriers' switches should be allowed to connect to C&WJ tandems anywhere in Jamaica. They should not be constrained to connect only within the IAA in which, they are located.

Connection to C&WJ End Offices

- 3.4 During the initial stages of service, carriers are unlikely to have a pressing need to interconnect at end offices and usually do not do so. Connecting carriers who are just starting service are almost certainly not in a position to estimate traffic flows in great detail, and, therefore, could not effectively utilise direct end office connections. Also, their volumes of traffic will probably be small enough to make such dispersed trunk groups uneconomically small. In fact, in the US, connection to tandems was demanded by interexchange carriers when interexchange competition first began.
- 3.5 Established long-distance carriers and wireless carriers, however, often interconnect at end offices to save costs and provide better quality of service. If there are substantial volumes of traffic between connecting carriers and certain C&WJ end offices, direct connections become important because these calls need not incur the costs of traversing a tandem switch.
- 3.6 The Office is also aware that some end offices may not generate enough traffic to warrant direct connection. Implementation of this policy can be quite complex, involving modification of end-office software, and much more detailed traffic forecasts.

Determination 3.3 Beginning in Phase II when rates for connecting to end offices are included in the RIO, C&WJ shall, upon bona fide request, make direct connections available to any end office (except remotes) for the purpose of originating and terminating traffic at that office. A bona fide request shall be accompanied by a commitment by the entrant to connect, and the connection shall be made available within six months of the request. This provision is for originating and terminating traffic only. It is not intended to allow the use of end offices as tandems.

Connection to C&WJ's International Gateway

- 3.7 One of the mobile entrants has raised the concern that if the C&WJ tandem switches need to be transited to reach the international gateways, there may be added congestion that would interfere with their international traffic. C&WJ counters this by pointing out that by using the fixed network, either gateway switch can be accessed, which may improve service quality. In any event, it is clear to the Office that extra costs are involved in transiting the fixed network, and that direct connection is appropriate. C&WJ also argues that their gateway switches are no longer supported by the manufacturer, and that it will take some time to make the appropriate modifications to support this interface. The penalty for some delay does not seem great, since the costs of transiting the fixed network are small, and the concerns about service quality are not substantiated.

Determination 3.4: Mobile entrants should be allowed to connect directly to C&WJ's international gateway as of March 1, 2002.

All Interconnecting Trunks must be Unidirectional

- 3.8 The requirement for all trunks in the In-Span Joining Service links to be unidirectional is supported by the claims that measurement of traffic and identification of the connecting carriers associated with each trunk group is simpler if the trunk groups are unidirectional. That may be true but the policy imposes significant costs on competitors and is likely to inhibit efficient competition. In particular, it may cause undue hardship to small or beginning interconnecting carriers. The need to subdivide their already small trunk groups, particularly if they are used to reach distant regions, can lead to a significant cost increase. It is unlikely that the modern digital switches being used as tandems cannot perform the appropriate identification and measurement functions on bothway circuits. However, the penalty is quite small for large trunk groups.

Determination 3.5: Trunk groups of four or more T-1s when engineered on a bi-directional basis may be split into unidirectional groups. Smaller trunk groups, however, must be made available as bothway trunks.

Point of Termination of the In-span Joining Service

- 3.9 The RIO specifies that the In-Span Joining Service, when provided by the Service Provider (C&WJ), should terminate at a "footway box" close to the Service Taker's premises. Digicel has stated that they would prefer that the service terminate at a frame in their building. This appears to be a simpler and more economical arrangement and the Office directs that it be included as an option in the revised version of the RIO.

Determination 3.6: Service Takers should be offered the option of terminating traffic at a frame within their building. Where a service takers chooses the option it is obliged to make appropriate arrangements for access to its premises by C&WJ personnel, and for establishing and maintaining an appropriate environment for C&WJ equipment. The "footway box" arrangement should remain in the RIO as an

option, in the event that the Service Taker does not want to terminate the service within its building.

Connections Between Mobile Networks

3.10 The Office takes the position that allowing physical connections between C&WJ's mobile and the mobile networks of entrants is not essential during Phase I, since the volume of traffic on such routes is likely to be small, and the interconnecting trunk groups could be uneconomical. Ultimately, however, direct connections between wireless switching offices should be allowed, just as are connections to all of C&WJ'S terrestrial switches. This should not cause any technical problems, and would eliminate the need to use the terrestrial network and incur the associated costs. C&WJ requests that this requirement be delayed to give them enough time to modify their equipment. Although it seems likely that this arrangement could be advanced, the penalty for delay seems minute.

Determination 3.7: The Office directs that entrants be allowed to interconnect directly to C&WJ's mobile switches as of March 1, 2002

CHAPTER 4: INTERCONNECTION SERVICES

Introduction

4.0 Table 4.1 sets out the list of interconnect services, grouped into four categories, that are provided for in the RIO.

Table 4.1: Services in the RIO

<i>Category in RIO</i>	<i>Service Name</i>	<i>Discussed under heading below</i>
Joining	In-Span Joining	Interconnection circuits
Termination	a) PSTN ⁴ Terminating Access Service b) PLMN ⁵ Terminating Access Service c) Incoming International PLMN Terminating Access Service	(a) Fixed network interconnection services (b) Mobile network interconnection services (c) Mobile network interconnection services
Special Access	a) Emergency Services b) National DQ Services	(a) Ancillary services (b) Ancillary services
Wholesale	a) PSTN Transit service b) PSTN Outgoing International Service	(a) Fixed network interconnection services (b) International switched minutes

Source: OUR from the Service Descriptions in the RIO

Interconnection Circuits

4.1 Aspects of this service were covered at 3.8 and 3.9 in the previous chapter, but the Office wishes to make an additional determination at this point. It is not clear from the RIO whether capacity in the In-Span Joining Service can be purchased in T-1 sizes, or whether the minimum size offered is OC-1. If OC-1 is the minimum size offered, this may require new operators to pay for far more capacity than they require, with significant economic penalties. Digicel has indicated that it would like to purchase services in multiples of T-1 and the Office sees no reason why this should not be allowed.

Determination 4.1: Entrants should be allowed to purchase services in multiples of T-1

Fixed Network Interconnection Services

4.2 C&WJ is offering call termination and transit services on its fixed network. There are two versions of each service: regional, and national. 'Regional' call termination is used where the terminating subscriber is located in the same

⁴ Public Switched Telephone Network

⁵ Public Land Mobile Network

Interconnect Access Area (IAA) as the ISL where the call is handed over by the mobile entrant to C&WJ for termination. 'National' call termination is used where the terminating subscriber and the ISL are in different IAAs. The rationale for distinguishing between termination and transit services is to provide better reflection of the costs incurred. This distinction also gives interconnecting carriers improved signals for their 'make or buy' decisions.

Determination 4.2: The Office has no objection to the arrangements in the RIO with regard to fixed network interconnection services.

Mobile Network Interconnection Services

4.3 The mobile network interconnect services provided for in the RIO are: domestic PLMN termination, and incoming international PLMN termination.

- **Domestic PLMN Termination**

4.4 This service will allow entrants to terminate calls on C&WJ's mobile network. As direct connection to C&WJ's mobile network is delayed until March 2002 entrants will be logically connected via the terrestrial network using the fixed network transit service.

- **Incoming International PLMN Termination**

4.5 This is a service provided by C&WJ to the mobile entrant, i.e. conveyance over C&WJ's international and domestic networks to the mobile entrant. Indeed, C&WJ, in a response to queries from the Office (dated May 3, 2000), claims that incoming international PLMN terminating access service is a version of transit service. According to the Company, overseas carriers terminate calls on its network since no direct connection between a Mobile Telco and foreign carriers is permitted until Phase III. C&WJ further notes that if the service was offered by a Mobile Telco, C&WJ would be unable to differentiate traffic originating internationally and, therefore, could not bill the service correctly.

4.6 The Office considers the above to be a misleading description of the service. It is C&WJ and not the mobile entrant which, receives a settlement rate payment from the foreign operator for the incoming call. In return for receipt of the settlement rate, C&WJ sells the originating carrier, transit to, and call termination in, Jamaica. The latter component (call termination) is purchased by C&WJ from mobile operators.

Determination 4.3: For incoming international calls the interconnection service provided should be treated as a call termination service sold by the mobile operators to C&WJ (as the international carrier).

Ancillary Services

4.7 The mobile entrants, in common with all providers of public voice services, have obligations under the Act to provide to their retail customers, access to emergency and directory assistance services. For both services, the RIO provides for conveyance to the relevant operator centre and the use of an

operator. The Office also recognises the need to guard against the misuse of information supplied by interconnect seekers through the DQ interconnect service offered by C&WJ.

Determination 4.4: Existing provision in the RIO will allow entrants to provide directory assistance and emergency to their retail customers. To guard against the existing carrier and service provider, placing its competitors at a disadvantage, the revised RIO should stipulate that:-

- information supplied by interconnect seekers through the DQ interconnect service offered by C&WJ will not be used to gain unfair competitive advantage over rivals.
- directory assistance services offered by C&WJ must satisfy the principle of non-discrimination.

4.8 Digicel has requested immediate access to the DQ database as an alternative to acquiring the services from C&WJ. The Office considers this to be a reasonable request. However, as set out in the December 2000 RIO Assessment consultative document, the process of liberalisation of DQ services is usually a lengthy exercise due to the need for wide public consultation regarding inter alia, intellectual property contained in directory databases. Such considerations as to how the information is used and disclosed and how to avoid misuse are critical issues. There are also technical and operational issues associated with direct access to the DQ database: cost and charging, timing and availability of updates. The OUR would, therefore, need adequate time in which to consult with the players in the sector on all the issues surrounding this matter including the establishment of an appropriate timeframe for liberalisation.

Determination 4.4: Direct access to the DQ database is delayed until the Office has consulted on the matter

4.9 Another possible type of ancillary service, which is offered by incumbents in some countries, is access to operator assistance services. It is generally considered easier for new entrants to self-provide operator assistance than either emergency services or directory assistance. This is a service that is not provided for in the RIO although it can be easily made available in the same manner as DQ services.

Determination 4.5: The revised RIO should allow for entrants to have access to all operators services that are available to C&WJ mobile customers.

Calling Party Pays

4.10 The Office is aware that entrants may want to operate in a "calling party pays" (CPP) mode. It should be recognised that this arrangement is already provided for in the RIO: "The PLMN terminating service envisages that the Service Taker will pay the Service Supplier for call termination." Under CPP C&WJ's retention of revenues should be specified in the revised RIO. It should be cost oriented

and designed to cover call setup and carriage, interconnection, billing and collection.

Determination 4.6: Calling Party Pays service with cost oriented retention should be provided for mobile carriers

Other Services

4.11 The service list set out in the RIO includes some of the principal services required for voicegrade services. However, some additional services are needed specifically by mobile operators and the Office has determined that they should be provided for in the revised version of the RIO. The services are: international roaming, digital services, and private lines.

- International Roaming

4.12 The revised RIO should provide for international roaming. This would allow a wireless customer travelling in Jamaica from another country to make and receive calls using the local operator with a compatible protocol, ie a customer of a foreign GSM carrier could use Digicel and vice versa, a customer of a foreign TDMA carrier could use C&WJ and vice versa, and a customer of a foreign CDMA carrier could use Centennial Digital and vice versa, assuming that both mobile carriers agree. The requirement is upon the fixed network to facilitate this service.

Determination 4.7: Additional services such as international roaming service for GSM and other protocols should be available to mobile carriers. The requirement includes the facilitation of all appropriate signaling.

- Digital Services

4.13 As digital services of various kinds are introduced into the PSTN, it will be necessary to make terminating access services available in digital modes at appropriate data rates. The details of these services are best left to negotiations among the carriers with a resort to the Office for arbitration if no agreement is reached.

4.14 During Phase I, entrants may wish to purchase 64 Kb/sec service and data services that can avoid compression devices and echo suppressors. The Office has determined that such services should be made available to competitors to the extent that they are available to C&WJ's customers.

Determination 4.8: The Office has no objection to the inclusion of digital services in the revised version of the RIO even if C&WJ does *not* offer them to its own customers.

- Private Lines

4.15 The Office has considered whether private line services need to be included in the RIO, under special wholesale rates. C&WJ argues that such services can be

provided under ordinary retail tariffs. The Office is aware that the mobile entrants have been granted spectrum that they can use to build their own microwave facilities and believes that this should provide them with the incentive to construct their own infrastructure facilities. The advantage of this approach is that it extends the scope of competition and makes the competitive process less reliant on regulation. Based on the above arguments, the Office is not minded to insist on the inclusion of private-line services in the RIO. This is, so long as adequate spectrum is available for self-provision.

Determination 4.9: To the extent that C&WJ makes private line services available to interconnecting carriers they should be provided under the same terms and conditions at which it offers such services to its mobile and large retail customers.

Facility Sharing

4.16 The Office has previously expressed the view that under the following conditions C&WJ should make its facilities available to entrants:-

- where the facility is a bottleneck (ie a facility that cannot be technically or economically substituted and at the same time is essential to speedy provision of service by the entrant);
- where the facility cannot be reasonably duplicated or substituted in a reasonable time frame without imposing undue financial burden and time penalties or inconvenience on the entrant;
- where the cost, time penalties and inconvenience to the licensees and the public of the alternatives to the shared provision and use of the facility are unreasonable or excessive; and
- where the facility has available capacity having regard to the current and reasonable future needs of the licensee to which the facility belongs.

4.17 The Office does not propose to insist on this however as it is satisfied that the parties should negotiate in good faith and where they are unable to come to a decision the matter can be referred to the Fair Trading Commission for resolution.

New Retail Services

4.18 The takes the view that if C&WJ makes any modifications to its fixed network to accommodate a new or modified service being offered by its mobile division, it must make that service available to competing mobile carriers as well. Furthermore, C&WJ should notify competitive mobile carriers about the new service at the time a decision to deploy is made by C&WJ. Where the new mobile service does not require changes in the fixed network, there is no need for C&WJ to make such disclosure.

Determination 4.10: C&WJ mobile will only launch a new retail product if:-

- **No new interconnection services are required**
- **C&WJ has notified mobile entrants of the nature of the new interconnect service at the time the deployment decision is made.**

CHAPTER 5: INTERCONNECT CHARGES AND OTHER PRICING ISSUES

Introduction

- 5.0 The Act requires that C&WJ's interconnection charges be cost oriented. It also provides that where the Office is unable to obtain cost information that, "it is reasonably satisfied is relevant and reliable" it may adopt international benchmarks.
- 5.1 On February 9, 2001 the Office published a two-part advance notice on interconnect charges and fixed to mobile retail prices. Part I deals with interconnect charges and fixed-mobile retail price applicable until 31 August 2001. The approach to these issues which the Office intends to adopt after August 31, 2001 are set out in Part II. Following the release of the notice the Office has found it necessary to make some additional comments on the issue of charging as well as clarifying the arrangements for, before and after August 1, 2001.

Fixed Termination

- 5.2 Table 5.1 contains the approved rates upon the adoption of the revised RIO for terminating calls on C&WJ fixed network.

Table 5.1: Fixed Termination

		<i>Units</i>	<i>Peak</i>	<i>Off-peak</i>	<i>Weekend</i>
Regional	Call Setup	J\$ per call	0.414	0.289	0.207
	Duration	J\$ per minute	0.535	0.437	0.373
National	Call Setup	J\$ per call	0.622	0.433	0.311
	Duration	J\$ per minute	0.820	0.635	0.515

- 5.3 These rates are derived from C&WJ's cost system but modified to take account of concerns the Office had about that information. The rates include interconnect-specific charges but exclude an access-deficit charge (ADC). The position of the Office is that ADCs shall not be included in interconnection rates during this period.

Mobile Termination - International

- 5.4 These termination charges are to be paid by C&WJ to Digicel or Centennial for calls which originate overseas and terminate on the network of either Centennial Digital Jamaica or Digicel. These termination rates are defined as C&WJ's per minute (retail) rate for calls that originate on its fixed network and terminate on its mobile network *minus* the fixed network retention rate. The fixed network retention rates are set out in Table 5.2 and equal the per minute rates for fixed termination plus a surcharge of \$0.912 (US\$0.02) per minute to cover the incremental costs of call origination (compared to termination) and retail costs. The surcharge is based on international benchmarks; in particular, the amounts allowed for call setup adjustment and retail by the UK's Competition Commission,

formerly the Monopolies and Mergers Commission, for 2001-2002. These retention rates should be provided for in the revised version of the RIO.

Table 5.2: C&WJ Retention for Mobile Termination of International

		<i>Units</i>	<i>Peak</i>	<i>Off-peak</i>	<i>Weekend</i>
Regional	Call Setup	J\$ per call	0.414	0.289	0.207
	Duration	J\$ per minute	1.447	1.349	1.285
National	Call Setup	J\$ per call	0.622	0.433	0.311
	Duration	J\$ per minute	1.732	1.547	1.427

Mobile Termination - Domestic

5.5 This category deals with charges for calls that terminate on C&WJ's mobile network but originate on the mobile network of either Digicel or Centennial Digital and are to be paid to C&WJ. These charges are defined as the retail rate for calls that originate on C&WJ's fixed network and terminate on C&WJ's mobile network *minus* the rates contained in Table 5.3.

Table 5.3: Offset for Mobile-to-Mobile Termination

		<i>Units</i>	<i>Peak</i>	<i>Off-peak</i>	<i>Weekend</i>
Regional	Call Setup	J\$ per call	0.2070	0.1445	0.1035
	Duration	J\$ per minute	1.1795	1.1305	1.0985
National	Call Setup	J\$ per call	0.3110	0.2165	0.1555
	Duration	J\$ per minute	1.3220	1.2295	1.1695

5.6 The offsets in Table 5.3 equal C&WJ's retention rate (Table 5.2) less one-half of the rate for fixed termination (Table 5.1). The need for these offsets is to reflect the fact that both Digicel and Centennial do the billing and originate the call, and utilise less of the fixed network than for fixed termination.

Fixed-Mobile Retail Rates

5.7 The retail rates for calls from C&WJ's fixed network to C&WJ's mobile network will not be changed at this time. At the same time the retail rates for calls from C&WJ's fixed network to the mobile network of either Digicel or Centennial will be set by C&WJ at the direction of the mobile carrier. The minimum retail rates that can be charged are the retail rate for calls from C&WJ's fixed network to C&WJ's mobile network. The maximum retail rates that can be charged are set out in Table 5.4 below:-

Table 5.4: Maximum Retail Price for Fixed-to-Mobile Calls

		<i>Units</i>	<i>Peak</i>	<i>Off-peak</i>	<i>Weekend</i>
Regional	Call Setup	J\$ per call	0.41400	0.28900	0.20700
	Duration	J\$ per minute	11.7982	11.7002	11.6362
National	Call Setup	J\$ per call	0.62200	0.43300	0.31100
	Duration	J\$ per minute	12.0832	11.8982	11.7782

- 5.8 The maximum rates in Table 5.4 were established using international benchmarks for mobile termination (the rates allowed by the UK's Monopolies and Mergers Commission (now the Competition Commission), adjusted to reflect scale of operations, cost of capital, and other conditions in Jamaica plus the retention rate (Table 5.2). C&WJ will remit to the terminating mobile carrier the revenues less the retention (Table 5.2).

Determination 5.1: The determination of the Office with regard to rates are contained in Tables 5.1, 5.2, 5.3, and 5.4.

Notice of Mobile Operators Proposed Prices prior to Implementation

- 5.9 Entrants need to inform C&WJ of their prices prior to implementation. C&WJ has proposed a notice period of six weeks. C&WJ argued that one month's notice period is needed to give it enough time to communicate the retail prices to its customers. It must also have adequate time to clarify the prices with mobile operators and to arrange for notification to its customers. An extra ten working days is also required to enable press announcements to be put together and publication arranged as well as for other forms of customer notification to be planned and processed.

Determination 5.2: The minimum notice period for informing C&WJ of price changes is five weeks.

Application of National/Regional Rates

- 5.10 Mobile carriers have requested the Office to clarify the basis for determining when regional/national rates for calls involving mobile competitors would apply. The general principle underpinning the tariff structure is that where possible, C&WJ will interconnect with the other carriers in the same IAA as the other party to the call in which case the regional rate will apply. National rates shall be applicable when C&WJ cannot interconnect with the other carriers in the same IAA as the other party to the call and must convey the call from one interconnect access area to another.

Billing Verification

- 5.11 Entrants have also questioned the capability of C&WJ to provide CLI and ANI. In a letter to the Office dated February 19, 2001 C&WJ indicated that this type of information will be passed to mobile operators in order to allow them to carry out verification. The revised RIO should expressly provide for the availability of CLI and ANI to mobile entrants.

Determination 5.3: Revised RIO should provide for the availability of CLI and ANI to mobile operators

Future Modifications to Pricing and Charging

- 5.12 The proposed changes set out under this heading need not be reflected in the revised RIO. They are intended solely for the purposes of business planning and will be reflected when the modified RIO for Phase II comes into effect. These

proposed changes reflect the current intentions of the Office, based on the information available to it at this time. They do not in any way represent a firm commitment and will be reviewed in light of new information.

- 5.13 The policy of the Office is to have cost oriented interconnection rates after **31 August 2001**. Such cost oriented rates will take account of C&WJ cost data unless the Office considers that those data are not relevant or reliable. It is the intention of the Office to continue working with C&WJ and other interested parties to refine C&WJ's cost model.
- 5.14 Other intended changes to the methodology and mechanism are described below under the headings: fixed termination, mobile termination, and retail rates for fixed to mobile calls.
- **Fixed Termination**
- 5.15 As part of its assessment of C&WJ's overall plan for rebalancing rates, the Office will determine whether an ADC should be applied to calls originating on C&WJ's fixed network and carried by another carrier (e.g., a long-distance competitor). It is not the intention of the Office to apply an ADC to calls originating on mobile networks. However, the Office will consider whether C&WJ's retention for calls that originate on the fixed network and terminate on another carrier's mobile network should attract an ADC. Before taking a decision on this matter, the Office will consult with interested parties.
- **Uniform Mobile Termination**
- 5.16 The applicable termination rate for international calls that terminate on the network of a mobile carrier other than C&WJ (to be paid by C&WJ to the terminating mobile carrier) will be the uniform cost-oriented retail rate for calls that originate on the fixed network and terminate on any mobile network less the cost-oriented retention rate. This net amount equals the cost-oriented rate for mobile termination. This cost oriented mobile termination rate will be the same for all mobile carriers. Termination charge for calls that terminate on C&WJ's mobile network and originate on the mobile network of another carrier (to be paid by the other mobile carrier to C&WJ) will be cost-oriented, based on the specific cost of these particular calls.
- 5.17 The potential for abuse exists in the setting of mobile termination rates because the mobile operator has market power over access to any particular subscriber; i.e., the mobile network has a "bottleneck" on access to its subscriber. If callers could choose among terminating mobile networks, competition among mobile networks would exert downward pressure on termination prices. However, this is not the case. Once an individual elects to subscribe to a particular mobile network, the selected network has a degree of monopoly power over the price that it charges to any party wanting to reach their subscriber. In other words, when placing a call, a (fixed or mobile) caller must terminate the call at a specific

address. The mobile operator that controls access to that address effectively excludes competition in termination for that subscriber.

- 5.18 As the market develops, competition among mobile suppliers can be expected to lead to lower mobile retail rates. However, this competition for subscribers does not necessarily translate into lower rates for call termination. Indeed, the MMC's investigation confirmed that competitive pressure for subscribers is not likely to be brought to bear on termination fees. It noted clear signs of competition for subscribers among mobile operators in the United Kingdom, measured by increasing coverage, capacity and hence quality, and many new tariff packages.⁶ It also noted that the two leading operators appeared to be losing their predominant position in the market. However, survey evidence suggested that incoming call charges were a low priority for most mobile phone users.⁷ The MMC then considered whether, even if charges for incoming calls were very significant for mobile subscribers, there would be an incentive for mobile operators to reduce incoming call charges rather than other parts of the overall package. The MMC reasoned that there would not, given that most of the fixed-to-mobile calls were made by people without mobiles.⁸
- 5.19 This potential for abuse has led to suggestions of excessive mobile termination rates in several instances. For example, the International Telecommunications Union considers⁹ the fact that mobile-to-mobile interconnection rates are significantly lower than fixed-to-mobile rates in most ITU member states as evidence that fixed-to-mobile charges are far from being cost-oriented. Concern over excessive rates has led to corrective regulatory actions. In July 1998, the European Commission launched in-depth investigations into fixed-mobile interconnection rates in fourteen member states. In December of 1998, the Monopolies and Mergers Commission (MMC) in the United Kingdom issued findings following an investigation of whether termination charges made by Cellnet and Vodafone operated against the public interest.¹⁰ The MMC determined that there was insufficient competitive constraint on termination charges. The MMC found that the charges introduced by Cellnet and Vodafone in August 1998 were 22 per cent above the public interest benchmark.¹¹
- 5.20 Some countries anchor regulatory intervention in setting mobile termination prices to unsuccessful negotiation between the parties. However, the ITU observes¹² that the mandating of cost-oriented interconnection by fixed operators with significant market power ("SMP") without imposing any obligations on mobile

⁶ MMC Report, at para. 2.83.

⁷ MMC Report, at para. 2.93 – 2.94.

⁸ MMC Report, at para. 2.95.

⁹ ITU Fixed-Mobile Interconnection Workshop, Document WFMI/04 (14 September 2000), para. 29 hereafter, "ITU Report".

¹⁰ Monopolies and Mergers Commission, "Cellnet and Vodafone: Reports on references under section 13 of the Telecommunications Act 1984 on the charges made by Cellnet and Vodafone for terminating calls from fixed-line networks" (Presented to the Director General of Telecommunications December 1998), hereafter: "MMC Report".

¹¹ MMC Report, at para. 1.10.

¹² ITU Report, at para. 39.

operators results in inflated termination rates under CPP. The ITU offers the Australian Competition and Consumer Commission's (ACCC) declaration of GSM termination services as affected by SMP as an example of a definition based on market power.

- 5.21 There are currently several regulatory protocols for mandating cost-oriented interconnection rates for "major suppliers" or operators with SMP. Examples include the WTO Regulatory Reference Paper, the European Commission Interconnection Directive, the APEC principles and framework for interconnection, the 1996 U.S. Telecommunications Act and numerous other statutes.
- 5.22 It is possible that the potential abuses described above would not actually occur in practice in Jamaica. Moreover, the Office believes that abuse would be less likely if it was clear that it stood ready to intervene if abuses were perceived to be occurring. Nonetheless, the Office considers that it would be prudent to ensure that abuses do not occur in the first place by setting retail fixed-to-mobile call rates under price caps. The retail price cap should cover two separate cost elements – 1) the wireline operators' call handling costs (including call origination, conveyance and billing), and 2) wireless operators' termination costs. The wireline operators' portion of the fixed-to-mobile call rate (retention) should be determined through the C&WJ's process of setting interconnection rates. Changes in the retention rate should be treated as exogenous adjustments to the retail price cap. The wireless termination portion of the retail price cap should be cost-based.

- **Retail Rates for Fixed-Mobile Calls**

- 5.23 Studies conducted by the OUR indicate that current rates for calls from fixed to mobile customers are below cost. The Office intends to move to cost oriented rates in keeping with the requirements of the Act. These rates will include a cost-oriented charge for mobile termination plus a cost-oriented retention charge. The rates will take account of C&WJ cost data unless the Office considers that those data are not relevant or reliable. The Office has also considered the issue as to whether rates for calls from the fixed to mobile networks should be uniform and is currently disposed towards the application of such rate after September 1, 2000. The introduction of uniform rates will have the benefit of protecting consumers from uncertainty and confusion. As with a number of issues post September 1, 2001 this will also be subject of further consultation.

Ancillary Services

- 5.24 The RIO provides that competitors will pay for emergency-service termination. Although one entrant has disputed this proposal, the Office considers it to be justifiable on the grounds that C&WJ should be allowed to charge competitors the costs that it incurs in making emergency-terminations. If C&WJ allows its customers to make emergency calls without charge, it is absorbing the costs as part of its cost of business. If entrants elect to do the same for their customers, C&WJ should not be made to bear the costs. Failure to allow such charges would

reduce economic efficiency and result in a subsidy from wireline subscribers to wireless subscribers. The charges for all ancillary services including operator assistance and national DQ should be cost based.

Determination 5.4: The rates for national DQ and emergency services are approved. All other ancillary services provided to mobile operators should be cost based.

Public Switched Telephone Network Transit

5.25 Fixed transit services provided for in the RIO are at the wholesale rates.

Determination 5.5: The Office has not found these rates to be unreasonable and consequently determines that they be provided for in the revised RIO

Outgoing International Calls

5.26 The mobile entrants will wish to offer to their customers the ability to make international calls. Until Phase III C&WJ will have a monopoly on the provision of international facilities (outside of the Free Trade Zones and excluding pre-existing licensed VSAT operators). The mobile entrants must, therefore, purchase international services from C&WJ. In the RIO C&WJ is offering international calls to all destination countries through the POIs that would be established as provided for in Chapter 3 of this determination. However, in accordance with section 79(2) of the Act, C&WJ is proposing that the charges should be based on the retail prices *minus* a 14.5% discount on the going retail rates.

Determination 5.6: The Office considers the level of the discount to be reasonable and thus determines that the revised RIO should this 14.5% rate of discount.

Other Services

5.27 The services of concern here are digital modes and private lines.

Determination 5.7: Digital modes provided to entrants should be under identical terms and conditions including arrangements for pricing – level and structure- that it offers such services to its own mobile customers. Private lines should be available to entrants under identical terms and conditions, including arrangements for pricing (level and structure) that it offers such services to its large retail customers.

Facility Sharing

5.28 Where bottleneck facilities are shared, the Office's view is that the rates should reflect economic costs including a reasonable return on capital and must not distort the entrant's investment decision. Additionally, the non-discrimination principle should apply. It is assumed that rate related disputes during negotiation will be referred to the Fair Trading Commission for resolution.

CHAPTER 6: OTHER INTERCONNECT ISSUES

Adequacy of Protection of Information

6.0 For the purposes of facilitating interconnection, entrants may be required to provide information that is confidential and commercially sensitive. For example, to permit the incumbent to undertake proper network planning, interconnection seekers may need to provide the incumbent with detailed information on traffic. This could include current and expected traffic volumes, time of day profile, geographical pattern, etc. Some of this information will presumably be obtained by C&WJ's Carrier Services Division, and forwarded to the network implementation groups for provisioning. Others, such as actual traffic levels, will be collected in the network operations unit. In either case, it is important that this information does not "leak" back to the business units that are in competition with the entrant. The confidentiality of such information needs to be respected by the incumbent. It must not be disclosed to the entrants' competitors, including the incumbent's own retail and/or value-added businesses.

6.1 The only provision in the RIO dealing with potential misuse of information supplied for the purpose of facilitating interconnection is the Confidentiality section of the Legal Framework (22). The Office is of the view that the general statements contained in that brief section do not suffice to ensure that information will not be misused.

Determination 6.1: The Office has determined that the organizational arrangements, information flows and responsibilities set out below are to be inserted in the revised version of the RIO to provide safeguards for the handling of proprietary information supplied by competing carriers.

- All communications between competitive carriers and C&WJ shall flow through a separate organization. This organisation will be referred to herein as, the Carrier Services Division, or CSD.
- "Customer Facing Divisions" of C&WJ are defined for purposes herein to include the units responsible for the wireless services operations of C&WJ, and the marketing and customer services units for all retail telecommunications services.
- The CSD shall be organizationally separate from other units in the company, and shall report directly to a corporate officer.
- The CSD unit shall not share offices with any customer-facing division of C&WJ. Separate buildings are not required, but the offices must be clearly separated from the others.
- All employees of the CSD shall receive training materials informing them of their responsibilities for the handling of confidential information, and shall certify that they understand and agree to meet these responsibilities.
- The CSD shall not share employees with any other unit of C&WJ.
- There will be no restriction on the movement of personnel to or from the CSD.
- All communications and information received from competitive carriers, including but not limited to customer identification and location, traffic

forecasts, and service plans and parameters shall be received only by the CSD, shall be marked as “Confidential” and shall not be shared with any customer-facing division.

- Communications from operating divisions to customer-facing divisions, including, but not limited to, network traffic loads, service quality results and construction plans, shall not contain any confidential information originating from competitive carriers, except insofar as it is aggregated with other information and not separately identified.
- Internal audits of the handling of confidential information shall be performed by C&WJ within six months after the effective date of the RIO and no less frequently than annually thereafter. The results of the audits and plans for action in response to the results, if any, shall be reported to the Office at least two months after completion of the audit.

Insurance Coverage

6.2 The RIO at section 29 (Legal Framework) stipulates that Mobile Telco must maintain at its cost valid and enforceable public and product liability insurance policy providing for coverage to the tune of:-

- J\$200 million in respect of any one incident and unlimited in the aggregate for public liability; and
- J\$200 million in respect of any one incident and J\$400 million in the annual aggregate for product liability.

6.3 This Section also details the type of risk to be insured against and requires:-

- That C&WJ approves the insurer;
- That the insurance should be in the joint names of the Mobile Teleco and C&WJ; and
- That the Mobile Teleco provides C&WJ with details of such insurance and evidence of payment of premium and continuing validity of policy.

6.4 C&WJ has argued that such insurance is necessary to protect it from the financial risk that C&WJ faces pursuant to an interconnection agreement, particularly in the case of smaller interconnectors with unproven financial track record. The Office does not consider the above requirements to be justified. The Mobile Telcos have substantial assets in Jamaica including valuable spectrum rights and extensive installed network equipment. The value of these assets should be sufficient to protect C&WJ from loss under any eventuality.

Determination 6.2: The insurance requirements in the current RIO should be deleted. For the same reason the Office has also determined that there should be no requirement for any bank guarantees, letters of credit or escrow funds.

Publicity

6.5 At section 19.1 (Legal Framework) of the RIO, “Neither Party shall without the prior approval in writing (such approval not to be unreasonably withheld or delayed) of the other, make any public announcement or give any release or

statement to the press, television, radio or other media relating to or in any way connected with this Agreement.”

- 6.6 This provision, if left in the revised RIO might not only restrict a carrier’s ability to communicate with customers and the media on interconnection related matters but may also call into question matters of constitutionality. It should also be noted that clause 22 of the RIO already addresses concerns regarding confidentiality.

Determination 6.3: There should be no restrictions on disclosure of non-confidential information. It is not inconceivable, however, that the parties may mutually agree to have such a provision within their interconnection agreement but it cannot be a requirement of interconnection.

Arbitration of Interconnect Agreement

- 6.7 It has been suggested that the revised RIO provide for the Office to arbitrate post-contract disputes that are of a regulatory nature. The statutory provision is for the Office to arbitrate pre-contract disputes. Additionally, the Office recognises that it would not always be the most appropriate organisation to resolve disputes, such as routine or detailed commercial issues. It should be noted that at section 31 of the Legal Framework there are already provisions for post-contract disputes to be resolved through private, binding arbitration.

Determination 6.4: The Office does not envisage that it will have a role in arbitrating post-contract dispute.

Forecasting Requirements and Ordering Intervals¹³

- 6.8 These issues are scattered throughout various areas of the RIO, namely the legal framework, Chapter 2 of the Joint Working Manual (JWM), and Service Description.
- 6.9 It is essential for a service supplier such as C&WJ to obtain forecasts from those who wish to purchase its services, be they interconnecting carriers or retail customers. It is also true that larger customers, such as carriers, will have more effect on the supplier’s networks, and therefore may need to make more specific forecasts than smaller retail customers. Despite these general concerns, C&WJ’s forecasting guidelines, ordering intervals and charging practices, in the event that forecasts are inaccurate, are so self-protective and punitive that it may be difficult for competitors to operate. Generally, C&WJ requires forecast commitments seven to eight months in advance of service, and payments for all costs incurred in preparing to provide the forecasted service, regardless of the amount of service that is actually delivered. The RIO is silent on the method by which these costs will be determined. C&WJ also appears to have applied the same penalty provisions for dedicated services, such as In-Span Joining Service, which cannot readily be re-used by another customer, and common services such as network usage, which are, of course, entirely fungible.

¹³ Digicel has also expressed concern about many of the ordering and forecasting provisions included in the RIO.

- 6.10 Generally, service lead times should be as short as possible, and clearly commensurate with the type of activity required. Thus, an interval for adding a new cable can be longer than that for providing a new 1.544 Mbps channel on an existing carrier system. C&WJ should provide support for its ordering and servicing lead times, based on practices used to provide its own network services as well as international practices.
- 6.11 Similarly, cost penalties for underrunning forecasts should be well specified depending upon the nature of the service and the type of equipment involved. Conversely, the RIO states that service requirements above forecast levels need not be met. This is not acceptable. The service supplier should have an obligation to make a good faith effort to meet overruns in demand, even if it cannot always be done immediately.

Determination 6.5: In an effort to resolve the concerns cited above the Office has made the following determination along which lines it anticipates that C&WJ will revise its ordering and forecasting requirements:-

- **The two-year rolling forecasts by Service Takers for joining services, ancillary services and network Erlangs is appropriate, but it should be recognized that forecasts at that distance are generally advisory, to be used by the Service Supplier for planning purposes.**
- **The forecasts for joining services should include locations of interconnection and numbers of 1.544 Kbps lines.**
- **The forecasts for network carriage (Erlangs) should include points of origin (interconnection), and terminating service areas.**
- **The forecasts for ancillary services should include estimated number of calls.**

Determination 6.6: Joining Service firm orders should have the same ordering interval as large retail customers and C&WJ's mobile. If a service is ordered and then reduced or cancelled, penalties can only be applied to cover actual unrecovered costs. These can include:

- **one-off operating costs, such as installation, establishment of billing records, preparation of premises, etc.**
- **carrying charges, including capital charges and depreciation, for capital equipment that has been installed and cannot easily be redeployed, for the expected period until it will be reused. C&WJ should demonstrate the average interval for reuse of such plant, based on the type of plant and their normal growth rates. However, there should be no penalty for overforecasting for the first year of operation by an entrant.**

Determination 6.7: Ancillary Services also need not be ordered as such. They should be forecasted by the Service Taker, and charged for as they occur. The Service Supplier can readily monitor the trend of such usage which, combined with the forecasts by the Service Taker and demands from other sources, can be used to determine total demand for these services.

Determination 6.8: Network Erlangs should not be ordered as such. They should be charged for as they occur. The Service Supplier can readily estimate the total amount of network Erlangs from the amount of joining capacity that is ordered, which will not only indicate but also limit the amount of traffic that can be delivered from the network. The Service Taker must specify which service areas are to be accessed from each Joining Service, and the Service Supplier can distribute the traffic in the same manner that it distributes all other traffic on its network. Changes in traffic demand, up or down, will be correlated with changes in the amount and locations of Joining Services. Since network capacity is provided in common for a large variety of users, network engineering and administration processes will normally adjust for such changes in demand on an ongoing basis. Thus, there is no need for penalties for overrunning or underrunning, or specification of bounding intervals for, forecasts.

Determination 6.9: Although the forecasting and provisioning sections of the RIO are very detailed, it is not clear whether they are referring only to terminating service, for which there is a tariff, or to two way traffic. It should be made clear that dimensioning of both the Joining Services and the switched network requires estimates of both directions of traffic.

Other Technical Issues

- 6.13 The RIO contains a number of detailed technical provisions, some of which may cause difficulties for interconnecting carriers, and for which there appears to be little justification. Others appear to be reasonable, but have been disputed by one of the mobile entrant. These are listed and discussed below along with the determination made by the Office.

Joint Working Manual

- 6.14 Section 1.711 specifies 99.9 percent network link availability. Digicel complains that this is too low, suggesting 99.98 percent is a network figure that is usually exceeded. It seems likely that the difference is between network links and networks. If Digicel has more than one interconnecting link, its overall availability will be much greater. For example, two independent links to different switches, both operating at 99.9 percent, will give an overall availability of approximately 99.99 percent.

Determination 6.10: The Office determines that this provision is reasonable

- 6.15 Section 1.8.5.2 specifies a call completion probability of 99 percent. Digicel asks for 99.995 percent, without any apparent justification. 99 percent has long been an international standard in almost all circumstances.

Determination 6.11: The Office sees no reason why 99% is inadequate

- 6.16 Section 1.2.1.4 specifies that C&WJ uses the Nortel family of SONET equipment, and inter-operability with equipment of other vendors can only be guaranteed

after system-system tests. System-system testing is generally useful when establishing service regardless of the equipment type.

Determination 6.12: The Office's determination is that equipment of other vendors designed with the same interface specifications as Nortel equipment should not be subjected to additional tests because of the identity of the manufacturer.¹⁴

- 6.17 Section 1.8.3.5 states that the number of pairs of signaling links is equal to the amount of traffic in Erlangs divided by 2500. Longer calls occupy no more signaling network capacity than shorter ones. This formula could seriously underestimate the number of signaling links required if, for example, holding times become much shorter, or would seriously overestimate if calls got longer.

Determination 6.13: The Office has consequently determined that the signaling links should be engineered based on the number of call attempts rather than the total usage, since signaling messages are sent to set up calls.

- 6.18 Section 2.3.14.5 requires that, in the event of a delay by the Service Taker, the Service Supplier (C&WJ) shall be reimbursed for all costs incurred. The converse, when there is a delay by the Service Supplier, is covered in Section 2.3.14.3, and merely requires that the Service Taker be notified. As agreed to by C&WJ in their memorandum of 5 June 2000, these provisions should be symmetrical. However, Section 4.1A in the Legal Framework does specify reciprocity. Digicel comments that the limitation in Section 4.1A of the Legal Framework to no more than one-quarter's rental should be removed.

Determination 6.14: The Office has determined that the JWM and the Legal Framework should be brought into agreement on this point. The Office is in agreement with this proposal put forward by Digicel and consequently determines that this restriction should be removed.

¹⁴ Digicel has also expressed concern over this provision.

Legal Framework

- 6.19 Section 3.1 states that “the Service Supplier Joining Service, as defined in the Service Schedule “is ... the *only* method for the connectingC&WJ and Mobile Telco.” This clearly implies that C&WJ will be the Service Supplier. C&WJ’s response to queries from the Office, however, states, “In the case of the Joining Link Service, the Service Supplier could be either C&WJ or the new entrant.”

Determination 6.15: The Office has determined that this should be clarified, here and in other sections of the RIO, such as Section 1.2.1.1 of the JWM.

- 6.19 Section 4.2 deals with notification of interconnecting carriers (here referred to as “Mobile Telco”) of changes in the C&WJ network that will affect the interconnecting carriers. The words “reasonable endeavors to provide ...reasonable prior notice” seems far too vague.

Determination 6.16: The Office has determined that notification be made immediately upon the finalising of a decision to make changes to C&WJ’s network.

- 6.21 Section 5.1 prohibits the installation of interconnecting carrier equipment in C&WJ buildings. This section includes a statement that the In-Span Joining Service avoids the need for equipment collocation. If, however, the interconnecting carrier provides this service, as discussed above, then provision must be made for making the connection, either within or close to the C&WJ building.

Determination 6.17: The Office consequently has determined that this should be provided for in the revised RIO.

Annex A: Regulatory Framework for Interconnection

- 1 The Office of Utilities Regulation (OUR) is mandated by the Telecommunications Act 2000 to regulate interconnection. Interconnection is defined in the Telecommunications Act as the physical or logical connection of public voice networks of different carriers. Defined in this way, the requirement for interconnection contemplates only the linking of voice networks. There is, therefore, no statutory requirement for interconnection of data networks. Additionally, it means that during Phase I, interconnection relates to at least the activities of the incumbent voice carrier, the two new mobile entrants and two-way radio operators¹⁵. In this regard, a connection with a public network for the purpose of the wholesaling or retailing of service is not considered as interconnection.¹⁶
- 2 The ability and freedom of networks to interconnect, apart from being critical to the efficient delivery of telecommunications traffic, is critical to promoting competition in the telecommunications sector. The importance of interconnection is perhaps underscored by the fact that Part V of the Telecommunications Act, 2000 is dedicated solely to setting out the principles, conditions, rules and activities that are required in respect of interconnection.
3. The Telecommunications Act (Section 29 (1)) makes it obligatory for each carrier to provide interconnection with its public voice network on request. The Act also stipulates the principles and the conditions governing interconnection. The OUR may assess Reference Interconnection Offers (RIOs) to ensure that they are in keeping with the principles and the stipulations laid down in the Act. A RIO is defined in the Act as “an offer document setting out matters relating to the price and terms and conditions under which a public voice carrier will permit interconnection to its public voice network”. The RIO provides the preliminary basis for arriving at an agreement on the terms of interconnection.
- 4 Section 32 (1) imposes an obligation on a carrier that has been declared dominant by the OUR to submit a RIO. A carrier, other than a dominant carrier may submit a RIO to the OUR but this is not obligatory. Outside of any declaration of dominance, Section 32 (2) provides that the existing telecommunications carrier (Cable and Wireless Jamaica) shall submit its initial RIO to the OUR within thirty days of the appointed date. In accordance with this, Cable and Wireless Jamaica (C&W) submitted its RIO to the OUR on March 30, 2000.
- 5 In respect of a RIO submitted to the OUR, Section 32 (4) of the Act contemplates that the RIO may be approved in whole or in part by the OUR. “A RIO or part thereof, shall take effect upon approval by the Office in the prescribed manner”.

¹⁵ Under the terms of the Telecommunications Act 2000 the telecommunications sector will be liberalised over a three-year period in eighteen-month tranches.

¹⁶ See Chapter 1 of OUR document titled, Dominant Public Voice Carrier for a further discussion of interconnection, wholesale and retail markets.

Section 31 (a) of the Telecommunications Act specifies that the terms and conditions pertaining to interconnection services shall be determined in accordance with the relevant reference interconnection offer and or any part thereof which is in effect. The effect of this is that once a RIO or a part of it is approved by the OUR, it is binding on all parties. This effectively removes it from the ambit of commercial negotiation.

6. Where the interconnection seeker and the interconnection provider fail to agree on the terms and conditions of a proposed interconnection agreement, and the transaction involves a dominant carrier, the OUR has a responsibility to arbitrate if either of the parties refer the matter to it. The OUR is also authorised to make rules relating to the arbitration of such disputes and its decision in such instances must be consistent with: –
 - Any agreement reached between the parties as to the matter that are not in dispute;
 - The terms and conditions set out in a RIO or any part thereof that is in effect with respect to the interconnection provider;
 - The principles specified in Sections 29 (2) and 30 (1) of the Act.
7. The OUR is not obliged to arbitrate in a dispute that does not involve a dominant voice provider.
8. Section 29(3) of the Act requires that copies of all agreements must be lodged with the OUR which may object to any such agreement in the prescribed manner. Such agreements must be consistent with the terms approved in the RIO or with the principles set out in Section 29 (2) and 30 (1) of the Act, as applicable.
9. Where the interconnection seeker and the interconnection provider fail to agree on the terms and conditions of a proposed interconnection agreement and the transaction involves a dominant provider, the OUR has a responsibility to arbitrate and in this regard, is authorised to make rules relating to such arbitration. The OUR's decision in such instances must be consistent with: –
 - Any agreement reached between the parties as to matter that are not in dispute;
 - The terms and conditions set out in a RIO or any part thereof that is in effect with respect to the interconnection provider;
 - The principles specified in sections 29 (2) and (30) (1) of the Act

Interconnection Principles

10. Section 29(2) of the Act stipulates that interconnection by public voice carriers must be provided in accordance with the following principles:-

- *any-to-any* connectivity which means that each customer of a network shall be able to make and receive calls from all customers of other public voice networks;
 - The maintenance of *end-to-end operability* in order to facilitate the provision of high quality service by an interconnecting carrier to the customer notwithstanding that the customer is directly connected to a different network;
 - *Equality of responsibility* among carriers for establishing timely interconnection.
11. In addition to the above principles, a dominant carrier is also required to provide interconnection on terms and conditions that are:-
- Non-discriminatory;
 - Reasonable and transparent;
 - Include cost oriented charges
 - Exempt of unfair cross subsidies; and
 - Such that where, technically and economically reasonable, are so diverse as to render it unnecessary for an interconnection seeker to pay unreasonable for network component or facilities that it does not require.
12. Section 30 (2) requires each dominant public voice carrier to keep separate accounts in such a form and containing such particulars as will enable the OUR to assess if interconnection is being provided on the basis of the required principles.
13. The Act requires the prescription of conditions and process relating to interconnection. Such prescriptions relate to, the content of RIOs (Section 32 [3]); the process for arbitrating pre-contract disputes (Section 34 [2]); and the handling of objection to interconnection agreements (Section 29 [3]). Annex B sets out the proposed rules relating to these matters that the Office intends to adopt and comments are invited by March 31, 2001.

ANNEX B: Proposed Rules for Reference Interconnect Offers, Interconnect Agreements and Arbitration of Pre-contract Disputes

Process for Assessment of RIO

[see section 32(4) of the Act]

- 1.1 Dominant public voice carriers shall submit their RIOs to the Office in both hard copy and electronic form. [See section 32(2) of the Act for timing requirements for dominant public voice carriers] A non-dominant public voice carrier may lodge a RIO with the Office, although it is not obligated to do so [see section 32(1).]
- 1.2 Within 7 days following the lodging of a RIO with the Office by a carrier, that carrier ('the submitting carrier') shall make available to the public on request copies of its RIO free of charge, either in hard copy or in electronic form. The carrier shall be deemed to fulfil this requirement if it posts the RIO on its Website.
- 1.3 The Office may assess a reference interconnection offer (RIO) that has been lodged with it and in doing so it may approve or reject the RIO in whole or in part. For the avoidance of doubt, the Office is not obligated to approve or reject any part - it may choose not to make an assessment of any or all parts of a RIO.
- 1.4 In assessing a RIO in whole or in part, the Office shall consider whether it is consistent with the principles set out in the Act. The principles relevant for all submitting carriers are set out in sections 29(1) and 29(2). Additionally, in the case of a submitting carrier that has been classified by the Office as a dominant public voice carrier [under section 28], the principles set out in section 30(1) shall also be relevant.
- 1.5 If the Office is satisfied that the RIO or any part thereof is consistent with all of the relevant principles, it may issue a decision in writing approving that RIO in whole or in part. The decision shall be accompanied by an explanation of the reasons for the approval. Within 7 days following a decision by the Office, the submitting carrier shall amend its RIO to indicate clearly those parts that have been approved by the Office and those parts that have not been approved. [Note the significance of approval by the Office. It means that the whole or part of the RIO "takes effect" - see section 32(4). Terms and conditions of interconnection agreements must be in accordance with any relevant RIO or part thereof which is "in effect" - see section 31.]
- 1.6 Within 7 days following the lodging of an amended RIO with the Office, the submitting carrier shall make available to the public on request copies of its amended RIO free of charge, either in hard copy or in electronic form. The carrier shall be deemed to fulfil this requirement if it posts the whole amended RIO on its Website.

- 1.7 If the Office considers that the RIO or any part thereof is inconsistent with any of the relevant principles, it may issue a decision in writing rejecting that RIO in whole or in part. The decision shall be accompanied by an explanation of the reasons for the rejection.
- 1.8 Before making a decision to approve or reject a RIO in whole or in part, the Office shall consult with such persons as it reasonably considers are interested parties and it shall have regard to submissions received in that consultation process.
- 1.9 As part of a decision to reject a RIO in whole or in part, the Office may:
- require the submitting carrier, within a number of days (to be specified and consistent with any guidelines that may be issued by the Office) to offer amendments to the relevant terms and conditions of its RIO and lodge the amended RIO with the Office; or
 - make a determination of the relevant terms and conditions. in which case the submitting carrier shall, within 7 days, amend its RIO accordingly, indicating clearly those terms and conditions that have been determined by the Office, and lodge the amended RIO with the Office.
- 1.10 If the submitting carrier wishes to amend its RIO or any part thereof that has not taken effect (i.e. has not previously been approved by the Office), the submitting carrier shall lodge the amended RIO in its entirety and shall in addition submit a separate document, setting out the amended parts and the reasons for the amendments. The OUR shall adopt the same procedure and criteria as set out above for the assessment of the original RIO.
- 1.11 Before amending its RIO or any part thereof that is in effect (i.e. has previously been approved by the Office), the submitting carrier shall obtain the prior written approval of the Office. To apply for such approval, the carrier shall submit both the proposed RIO in its entirety and a separate document, setting out the proposed amended parts and the reasons for the proposed amendments. Such submissions shall not be considered to constitute the lodging of a RIO (i.e. the publication requirements for a lodged RIO need not apply). The OUR will treat such application using the same procedure and criteria as set out above for the assessment of the original RIO. If approval is granted by the Office for some or all of the proposed amendments, the amended RIO shall be lodged with the Office within 7 days of the granting of approval.
- 1.12 The publication requirements in paragraph 1.6 shall apply to RIOs amended in accordance with paragraphs 1.9, 1.10 and 1.11.

Particulars to be Contained in RIOs

[see section 32(3) of the Act]

2.1 A reference interconnection offer (RIO) shall:

1. Designate one or more points of interconnection at which the provider will permit physical interconnection, setting out the exact location of relevant switches.
2. Set out applicable technical specifications regarding interconnection, including:-
 - detailed description of the interconnection interface(s) and the signalling protocol used;
 - non-discriminatory measures or restrictions that are necessary to ensure network security or integrity;
 - service level parameters including availability, security, efficiency and synchronization;
 - traffic routing arrangements; and
 - arrangements for submitting trouble reports, and handling and clearing faults.
3. Specify a list of interconnection services, including a detailed description of each service and any service-specific terms and conditions.
4. Identify the price to be paid for the provision of each interconnection service, showing the unit of billing and charging, and separately identifying any supplementary charges.
5. State the duration of the terms and conditions proposed therein.
6. Specify conditions governing service provisioning, including traffic forecasting arrangements and implementation of interconnection interfaces.
7. Set out arrangements for the reciprocal sizing of interface equipment and for testing the operation of interfaces and the end-to-end operability of services subject to interconnection.
8. Include standard commercial provisions governing such matters as:
 - billing and collection procedures;
 - exchange of information necessary to facilitate interconnection;
 - protection of the confidentiality of such information, including as between different parts of the carrier's businesses;
 - definition and limitation of liability;
 - indemnification;
 - notifications;
 - default; and

- termination.
9. Set out the procedure for initiating and conducting negotiations over interconnection agreements, including:
 - the information that is required from the interconnection seeker before negotiations can commence;
 - where and how the request for interconnection and any supporting information should be sent; and
 - target timings for the conclusion of interconnection agreements (under different specified circumstances).
 10. Set out post-contract dispute resolution procedures.
 11. Set out the procedure in case of proposed changes to the terms and conditions of the interconnection agreement, including the introduction of new interconnection services.

Objection to interconnection agreements

[see section 29(3) of the Act]

- 3.1 Every interconnection agreement shall be lodged with the Office within 7 days following its date of signing.
- 3.2 Within twelve months from the date at which an interconnection agreement has been lodged with the Office, the Office may issue a decision in writing objecting to that agreement or any part thereof. The decision shall identify the 'adverse effects' (see paragraph 3.3 below) and shall be accompanied by an explanation of the reasons for the objection.
- 3.3 The Office may make an objection if it considers that the interconnection agreement or any part thereof has adverse effects, which shall include any term or condition that:-
 - unfairly discriminates against other carriers or service providers, or is otherwise unlawful, in a way which has or is likely to have the effect of substantially lessening competition in a market; or
 - materially damages the interests of customers.
- 3.4 Where a decision has been made to object to an interconnection agreement in whole or in part, the Office may:
 - require the parties, within a number of days to be specified and consistent with any guidelines that may be issued by the Office, to offer amendments to the relevant terms and conditions of the agreement and lodge the amended agreement with the Office; or

- make a determination of such terms and conditions, in which case the agreement shall be amended accordingly by the parties and the amended agreement lodged with the Office within 7 days of the determination.
- 3.5 Before making a determination of terms and conditions, the Office should be satisfied on reasonable grounds that there is no other action, which it could take to prevent that agreement from having the adverse effects identified.
- 3.6 Where an amended agreement is lodged with the Office, it may issue a decision in writing objecting to the amended agreement, using the same procedure and criteria as set out above for the original agreement.

Arbitration of Pre-Contract Disputes

[Note: Under section 31(c) of the Act pre-contract disputes may be referred to the OUR for dispute resolution, which will make applicable rules pursuant to section 34(2).]

- 3.7 As set out in the legislation, where a party, in negotiating a contract for interconnection or the resale of international switched minutes, seeks resolution of a dispute, the party may refer the dispute to the Office for resolution. The arbitration is said to commence upon such an application and once notice is given which sets out the particulars of the parties in dispute and the matter of the dispute.
- 3.8 The Office shall appoint an arbitrator or panel of arbitrators, with or without the advice of the parties. Such person(s) should, as a matter of routine, be members of the OUR or, for exceptional reasons, outside personnel may be retained. The size and composition of the arbitration panel shall be appropriate to the nature of the dispute.
- 3.9 The arbitrator shall contact the parties and in concert with OUR staff establish the procedures and timelines to be followed with respect to statements of claim, defense and counterclaim, the production of documents, evidence, submissions, oral or otherwise.
- 3.10 If the parties have been unable to agree as to the stipulation of the statement of issues the arbitrator(s) shall decide the statement of disputed issues.
- 3.11 Notice of the dispute and the particulars of the claim will be a matter of the public record. The arbitration process and record of evidence will be considered a confidential matter between the parties. The decision of the Office in accepting or rejecting the arbitrator's decision will be a matter of public record.

- 3.12 Statements of claim and counterclaim should clearly outline the factual stipulations, the claims made and the relief sought. The arbitrator will establish timelines for the submission of basic facts and the claims made, the relief sought, counterclaims and reply. Where there is a disagreement over whether the issue of dispute is properly subject to the arbitration process, the arbitrator shall rule prior to hearing evidence.
- 3.13 Documents relied upon in the statements of claim should accompany the filing of the statements and be made available to the other party. A party to the proceeding may request the arbitrator(s) to order the other party to produce certain information for the record. The arbitrator may alter, amend, or supplement the information request as it deems appropriate.
- 3.14 Timelines should be set for the introduction of evidence in the form of sworn statements of witnesses from each party and that to be used for reply. Testimony and exhibits or position papers will be pre-filed and in accordance with the established schedule. The arbitrator may limit the number of witnesses offering testimony on behalf of any party. General rules of evidence shall apply.
- 3.15 If written interrogatories are to be used, timelines and procedures should be established. And, similarly if oral evidence is to be heard, the time, date, location and procedures should be outlined. If oral testimony is used, the arbitrator(s) may ask questions of the witnesses and may seek further information from any party to be submitted for the record.
- 3.16 The arbitrator(s) will direct the parties to submit written arguments within specified timelines and or set procedures for hearing oral arguments.
- 3.17 The arbitrator may rule regardless of the participation of either party assuming each has been properly notified of the conduct of the proceeding.
- 3.18 Normally costs would be borne by the parties unless the Office finds extenuating circumstances.
- 3.19 The arbitrator(s) will render its decision to the Office within specified timelines and the decision will refer to the record of evidence in making its findings. The Office, in keeping with the legislation, may approve or reject the arbitrator(s) decision in issuing the decision.

ANNEX C: GLOSSARY OF TERMS

ACCC	Australian Competition and Consumer Commission
ADC	Access Deficit Charge
ANI	Automatic Number Identification
C&WJ	Cable & Wireless Jamaica
CLI	Caller Line Identification
CPP	Calling Party Pays
DQ	Directory Enquiries
GSM	Global System of Mobile communications
IAA	Interconnect Access Area- the 4 areas into which Jamaica has been divided by C&WJ for interconnection purposes.
ISL	Interconnect Switch Location, a designated switch at which physical interconnection may occur. CWJ is offering two ISLs in each IAA.
ITU	International Telecommunications Union
JWM	Joint Working Manual
Kb/sec	Kilo bits per second
Mbps	Mega bits per second
MJL	Mossel Jamaica Limited (now Digicel)
MMC	Monopolies and Mergers Commission
OUR	Office of Utilities Regulation
PLMN	Public Land Mobile Network, which refers to a domestic mobile network.
POI	Point of interconnection
PSTN	Public Switched Telephone Network, which refers to the fixed network.
RIO	Reference Interconnection Offer

SMP	Significant Market Power
TDMA	Time Digital Multi-Access
VSAT	Very Small Aperture Terminal
WTO	World Trade Organisation