Office of the Director of
Telecommunications
Regulation

eircom's Reference Interconnect Offer

Decision Notice D7/00 & Report on the Consultation

Document No. ODTR 00/31 **April, 2000**

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PART I - Introduction to RIO Decision Notice

1. Introduction

The Director of Telecommunications Regulation ("the Director") is responsible for the regulation of the Irish telecommunications sector in accordance with national and EU legislation. A key issue of importance to the sector is that of interconnection.

In this respect, the Reference Interconnection Offer ("RIO") prepared by eircom is a fundamental document that influences the way competition operates in the telecommunications sector in Ireland. The RIO defines the mechanisms that allow competing operators to pass telephone traffic between each other (a task that is essential if a 'complete' telecommunications service is to be offered) and the prices that will apply in such cases.

eircom, under the Interconnection Regulations[1], is required to have in place a RIO that is in compliance with the relevant legislation, including the principles of transparency and cost-orientation and that sets out the particular components of interconnection according to market needs. The Director has a range of statutory functions in relation to the RIO.

[1] European Communities (Interconnection in Telecommunications) Regulations, 1998 (as amended) (S.I. No. 15 of 1998)

2. Background

In preparation for the full liberalisation of the telecommunications sector in December 1998, the Director and her Office ("ODTR") carried out a series of consultations on the services and charges set out in eircom's RIO. This led to the publication of two position papers and the availability of services and rates to allow the fully liberalised market to start working. eircom published a consolidated RIO in March 1999 that took account of the positions agreed in 1998.

Due to the time pressures of introducing liberalisation and the unavailability of full information in certain cases, a number of key matters in the RIO were determined on an interim basis pending further consideration. In March 1999, the ODTR launched a consultation process on these and other matters. The process involved the publication of a consultation document (ODTR 99/16)[2].

On the 7th September 1999, the Director concluded her review of eircom's RIO with the publication of Decision Notice D12/99 (ODTR 99/54)[3]. On 10th September, eircom announced that it was challenging the Director's decision and had issued High Court proceedings. As a result of the proceedings, by operation of law, the operation of Decision Notice D12/99 was then suspended.

To provide an opportunity to move forward on the RIO issues which are of key importance to all players in the market, the Director issued a new consultation (ODTR 00/16)[4] on all matters in D12/99. In so doing, the Director recognised that developments would have occurred in the telecommunications market place and, furthermore, that licensed operators would have greater experience operating under the interconnection regime.

The court proceedings in respect of D12/99 are still in place and to ensure no unnecessary delay arises in dealing with these, dates for possible court hearings have been agreed for both the scope of the appeal (26th of May) and the substantive issues (27th of June).

ODTR 00/16 sought views of interested parties in the following areas:-

- Issues Relating to Physical Interconnection
- Call Origination
- New Services
- RIO Management Processes
- Costing and Routing Principles

This Decision Notice sets out the report on the consultation process, together with the decisions of the Director with regard to the RIO taking into account the current state of market developments.

eircom, as an operator designated as having significant market power (SMP), is obliged under the Interconnection Regulations to provide interconnection services to other licensed operators and to publish a Reference Interconnection Offer (RIO), and to re-publish the offer where there is any change made to it.

In accordance with Regulation 8 of these Regulations, the Director is empowered to direct eircom to justify its RIO and shall, where appropriate, direct that the offer be adjusted so as to ensure that the offer satisfies the requirements of the Regulations. The directions given by the Director in this Decision Notice are in accordance with this Regulation.

[2] Telecom Éireann's Reference Interconnect Offer, Consultation Paper
[3] Telecom Éireann's Reference Interconnect Offer - Decision Notice D12/99
[4] eircom's Reference Interconnect Offer, Consultation Paper

Since the publication of consultation paper ODTR 99/16 in March 1999*,* licensed operators have had significant experience of working in the liberalised telecommunications environment in Ireland and have a better understanding of how interconnection works in practice. During this time, practice has also developed in other liberalised markets especially in other EU Member States. Greater experience and market developments generally have allowed licensed operators to provide more up-to-date responses to consultation paper ODTR 00/16. These new responses have been very helpful to the Director in informing her current decisions as set out in this document. Although in many cases new information has only served to confirm the Director's original decisions (as set out in ODTR D12/99), she now considers it appropriate to update certain other decisions as a result of the information now available. This report explains the current position and indicates the reasoning underlying the decisions whether or not individual decisions have been modified since ODTR D12/99. As a result, this report may be considered as a self-contained document.

One direction in this decision paper is particularly key. It requires eircom to republish its RIO, and to do so in a manner that conforms to certain other decisions of the Director as set out in the rest of this notice. This Decision Notice also includes a number of decisions that relate to general points of principle or longer-term work items.

The decisions included in this paper relate both to:

- the content and scope of eircom's RIO;
- the prices to be charged for the services offered.

These two aspects are covered in Parts II and Part III respectively of this report.

Eight organisations responded to the consultation document and the Director wishes to thank respondents and others that contributed to the process. The comments received have been very valuable in informing the decisions contained in this document.

Responses were received from the following organisations:-

- Cable and Wireless
- Conduit Europe Ltd
- eircom
- ESAT Digifone
- ESAT Telecom
- GTS
- MCI WorldCom
- OCEAN Communications Ltd

This document sets out the substantive issues raised in the responses. On some issues, there was broad agreement amongst respondents, whereas on others, different perspectives or analysis led to quite different views.

It should be noted that the Director will review the RIO on a regular basis (see section 7.1). This decision notice would thus be superseded by any further reviews. This document sets out the Director's current position on eircom's RIO, without prejudice to the legal position or the rights and duties of the Director to regulate the market generally.

The Director notes how much work has been undertaken to get to the current position. She considers that this document should resolve many key issues that remain open. She re-iterates her desire that competitive forces be allowed to operate effectively in the telecommunications sector, and that she anticipates operators will, in time, increasingly be able to agree mutually acceptable solutions to new issues as they arise.

The Director is also mindful of the delays that have occurred in developing the interconnect regime. She is aware of a number of issues beyond those raised in D12/99 that have been brought to her attention by operators over the intervening period since September 1999 and that have either not been resolved or need to be reconsidered in the light of current market developments. In order not to unduly delay further work on this matter, the Director invites comments from interested parties on what further developments they would like to see with regard to eircom's RIO. Comments should be submitted in writing no later than 5pm on 12th May 2000 to:-

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2.1 Related Consultations and Decision Notices

This Decision Notice is one of a series of linked papers that the ODTR continues to issue as part of its 2000 work programme. Each set of decisions is self contained, but a better overall understanding will be obtained by reviewing other decision notices on related issues. However, the ODTR believes that the modular approach to these consultations and Decision Notices provides the most flexible and fastest method of progressing key issues in the market.

Interested parties are referred to the relevant consultation documents and Decision Notices as set out in Appendix I.

2.2 Factors considered by the Director

In reaching the decisions as set out in this document the Director has, where appropriate, taken into account, inter alia, the following:

- Comments provide in response to ODTR 00/16.
- Representations made at meetings offered by the ODTR or at the ODTR's request with the industry. Meetings were held with Cable & Wireless, eircom, MCI Worldcom and Ocean.
- Irish and EU telecommunications law notably the European Communities (Interconnection in Telecommunications) Regulations, 1998 (SI 15 of 1998) (as amended) and the EU Directive 97/33/EC of 30 June 1997 on Interconnection in Telecommunications.
- EU recommendations and guidance.
- The Director's obligations to regulate the telecommunications market generally.
- The importance of suitable interconnection service to all licensed operators especially those new to the market.
- The urgency of a revised RIO.
- Expert advice available to the ODTR.

- International comparison data and other relevant information available to the Director.
- The capabilities and limitations of telecommunications networks and support systems (e.g. billing systems) in Ireland now and how this might change in the future.
- The opportunities that all licensed operators will continue to have to refer contentious items in the RIO to the Director for her consideration and, where appropriate, determination.

3. Republication of the RIO

In parts II and III of this document a number of changes required by the Director to either the scope or content of the RIO or the prices to be charged for RIO services are given. Some of these need to be included in a republished version of the RIO. The Director requires that eircom makes the changes and submits a new version of the RIO to her with the intention of republishing the full RIO including prices in conformity with the directions given in Part III.

Decision 3.1

This decision will come into effect on 27th June 2000 when eircom will publish a revised RIO in accordance with the decisions set out in this document.

Eircom will submit a draft RIO to the Director, revised in accordance with the decisions set out in this document on 22nd May 2000. The Director may direct further changes at that stage to ensure compliance with this Decision.

Part II - Content and Scope of RIO

In this section of the Decision Notice, the Director considers the need to modify the content and scope of the RIO; it discusses matters of policy. Part III goes on to consider more detailed issues relating to the calculation of prices for individual interconnection services. The issues addressed in this part include rules and procedures for the physical interconnection of network, the introduction of new services, RIO management procedures, and call origination.

4. Issues Relating to Physical Interconnection

This section of the report is concerned with the physical delivery and general composition of the physical links required for interconnection. Notably the section addresses:

- contents and status of an operations and maintenance (O&M) manual
- the need for service level agreements (SLA) to form part of the contractual arrangements between operators;
- timeframes for setting up points of interconnection (PoI) and interconnection links;
- penalties for delays in setting up links;
- issues relating to customer sited interconnection (CSI);
- issues relating to in-span interconnect (ISI);
- co-location;
- uni-direction versus bi-directional interconnection links.

4.1 Development of the O&M manual

The Director set out in ODTR 99/16 her view that an agreed Operations and Maintenance (O&M) manual was required if interconnection provisioning and operation was to function smoothly. As a consequence, a group consisting of eircom and a number of OLOs was created and agreed O&M and Technical Plan manuals.

The Director noted that the eircom RIO has an appendix which includes details entitled 'Network Plan' which contains a sub-set of the information contained in the O&M Manual and the eircom Technical Plan.

Following the initial consultation on this issue, the Director was of the view that this level of information was not adequate without reference to the latter documents, and therefore considered that the O&M Manual and the eircom Technical Plan should be considered an integral part of the RIO.

Respondents were asked their opinions on the Director's views.

Views of industry

All respondents were in general agreement that the O&M manual should not be integrated into the RIO. They viewed the O&M manual as a living document that needs to be constantly updated to allow for practical procedures and processes for interconnection set-up to be defined as and when required by the industry. Its inclusion in the RIO would make it contractually binding and would also mean that updating it would require ODTR approval. This was not though to be necessary or desirable given the purpose of the O&M manual.

Concerning the technical plan, OLOs were divided on this point, some did not view it separately from the O&M manual and the Director has therefore inferred that they felt that it should not be incorporated into the RIO. Three of the OLOs thought that the technical plan should be included as part of the RIO (one OLO alluded to the fact that ALTO had agreed this), with the exception of commercially sensitive operator specific information.

eircom outlined the document set which makes up eircom's interconnect offer to the market:

1. Reference Interconnect Offer – incorporates commercial and contractual terms relating to eircom's interconnect offer;
2. O&M manual – details the processes and mechanisms required to support the interconnect agreement;
3. Technical Plan – statement of the technical characteristics of the eircom network as encountered by an interconnecting OLO;
4. Network Plan – operator specific document detailing topology of interconnection between eircom and the OLO.

eircom argued that inclusion of the O&M manual or technical plan would lead to a loss of flexibility in amending these documents which would slow the development of interconnection services in Ireland.

Position of the Director

The Director requires that the technical plan should be referred to in the RIO. According to SI 15 of 1998, regulation 7.1(b), eircom must *"provide on request such information and specifications to organisations considering interconnection in order to facilitate conclusion of an agreement and the information provided shall include changes planned for implementation within the next six months following that request, unless otherwise agreed by the Director."* She therefore requires eircom to supply a copy of the technical plan to all interested parties that request it. A copy should preferably be made available on eircom's Internet site.

Any party requesting it should be supplied with the most recent edition of the technical plan as is available to all operators (including eircom retail and subsidiaries) so as to avoid discrimination in accordance with regulations 7.1 (a)(i) and 7.1 (a)(ii) of SI 15 of 1998.

The Director recognises that the O&M manual is a "living" document that requires a level of flexibility that is not afforded by inclusion in the RIO. She therefore agrees that the O&M manual does not need to be integrated into the RIO, but considers that it should remain separate in accordance with the majority of views expressed by the industry.

However, she shares the industry concern that the O&M manual should be in some way contractually binding.. This concern prompted the original view that it should be included in the RIO and hence become binding. The Director considers that an alternative way of addressing this concern is to develop a set of SLAs for time sensitive and critical performance elements of the manual. These SLAs should be included in the relevant areas of the RIO or in a new annex. (See section 4.2 for further information on this issue).

Decision 4.1.1

eircom will not include the technical plan in the RIO, but must refer to it where relevant in the RIO. It shall make the technical plan available in a non-discriminatory manner to any party that requests a copy in accordance with SI 15 1998.

Decision 4.1.2

The O&M manual shall not be included in the RIO.

4.2 Service Level agreements (SLAs)

The O&M Manual contains a list of procedures between eircom and OLOs, for the purposes of provision and ongoing operation of interconnect links. However, the manual is currently for guidance only and there is no SLA for these processes. The Director's view was that the development of such a SLA should ensure that:

- the standards which are set in the O&M Manual are, where appropriate, binding on eircom and the OLO;
- failure to adhere to such standards may be sanctioned through a penalty payment structure.

The Director asked the industry whether they shared her view that SLAs would create a contractually binding agreement for the supply of interconnection services as set out in the O&M manual.

Views of industry

OLOs were unanimous in their agreement that SLAs applied to time sensitive services in the O&M manual would provide the required level of contractual obligation on eircom to provide interconnect products in a timely manner. A number of the OLOs felt that the SLA form and structure developed for leased lines[5] would be appropriate to use for SLAs for interconnection services. Reference to the improving SLA targets for private circuits was made by a number of OLOs who thought the same principle should be applied to interconnection circuits.

eircom also agreed with the concept of SLAs for interconnection services. However, it pointed out that interconnection can be affected by both the interconnection provider (eircom) and the interconnection requester (the OLO). It felt that SLAs should be reciprocal, that the elements contained in them should have a clear owner and be measurable and that penalties should be proportionate to the charges for the particular element.

Position of the Director

The Director confirms her opinion that SLAs will be an effective mechanism to provide a contractually binding requirement on eircom to follow the procedures set out in the O&M manual for establishing interconnection with other operators. She continues to believe that this will improve the performance of eircom in delivering interconnection services to requesting operators.

She believes there is a requirement for SLAs where procedures or process in the O&M manual can be said to be 'time sensitive' or 'performance critical', for example where non performance may result in the delay of provisioning of the relevant interconnection service as intended by the O&M manual.

In particular, the Director is concerned that the provision of basic interconnect links (Annex D of the RIO) becomes a smooth and reliable exercise for operators requesting these from eircom. She requires that priority should be given to the development of SLAs for processes related to the provision of these links and that such SLAs should be based on the SLA structure developed for the delivery of leased lines as set out in ODTR document 99/48.

There may also be a requirement for SLAs for the processes of provision of specific interconnection services as set out in Annex C of the RIO. Where there is a request for the development of a SLA, the Director requires eircom to develop these and to include them in the RIO having sought the views of the industry and taken due regard of any such views received.

Where licensed operators cannot agree on the need for a SLA or its form and contents, they may refer the matter to the ODTR.

The Director does not agree with eircom that reciprocal SLAs should be developed by OLOs. She has no evidence that operators are having difficulties interconnecting with OLOs. She would expect OLOs to determine their own SLAs in the context of normal commercial negotiations.

[5] See ODTR 99/48 Service Levels provided to Other Licensed Operators by Licensees with Significant Market Power – Report on the Consultation

Decision 4.2.1

eircom must develop SLAs for time sensitive processes and critical performance elements of the O&M manual having sought the views of the industry and taken due regard of any such views received.

At a minimum, it shall develop SLAs for O&M processes for the provisioning of interconnect links as set out in Annex D of the RIO.

eircom must develop SLAs for O&M processes related to services set out in the service schedules of the RIO (Annex C of the RIO) where it is requested to do so by OLOs unless the Director determines that a SLA is not appropriate. In developing the SLA eircom shall seek the views of the industry and take due regard of any such views received.

Eircom shall submit its proposals for SLAs for the provisioning of interconnection links which are in accordance with ODTR document 99/48 and with the decisions in this document to the Director by 22 May. Such SLAs shall be come effective on 27th June 2000.

Decision 4.2.2

SLAs should be developed automatically for all new service schedules where this is appropriate.

4.3 Timeframes for Setting Up Points of Interconnection and Interconnection Links

The Director wishes to ensure that the time required to set-up new interconnect links is as short as possible. A table of European best practice contractual interconnection set-up times from last year was used to define what these time scales might be. Last year eircom set or equalled best practice in two of the four categories of interconnection on the basis of information that was publicly available on new interconnection links using an existing PoI and a new PoI using CSI.

Appropriate timeframes

The Director sought the opinions of the industry as to the appropriateness of eircom*'s* timeframes for the introduction of new services given the comparison with EU best practice.

Views of industry

OLOs were of the opinion that the EU best practice timeframes should be those used by eircom to gauge the maximum time from acceptance of order to ready for service date for the respective interconnect link. Concern was shown however, that the EU best practice time scales dated from one year ago and that a review of best practice should be made to ascertain new benchmarks. This has been done and the information is presented in the table below. eircom still sets or equals EU best practice in one of the categories, however, TeleDanmark now has a shorter maximum lead time for the implementation of a 2Mb link to a new CSI PoI.

Table 1- Interconnection implementation time scales

Description of service	**Eircom RIO**	**EU best practice (shortest timeframe)**
New interconnect paths on existing interconnection links using an existing PoI (capacity augmentation)	8 weeks (2 months)	6 weeks[6]
New interconnect links using an existing PoI	10 weeks	10 weeks[7]
New PoI using Customer Sited Interconnect (CSI)	16 weeks	14 weeks[8]
New PoI using In-Span Interconnect (ISI)	26 weeks (6 months)	17 weeks[9]

Source: Analysys/Arcome: European Interconnect Atlas

eircom did not believe that order quantities outside the forecasts of OLOs should be bound by the SLAs and stated that they should be delivered on a best effort basis.

Position of the Director

The Director believes that eircom should aim to incorporate the EU best practice time scales in its RIO SLA and that these should form the basis of eircom*'s* maximum delivery targets for the respective interconnect links.

Notwithstanding this goal, the Director believes it is appropriate for eircom to use its current time scales for delivery of interconnection circuits as a starting point for the measurement of its performance with regard to the delivery of interconnection circuits. However she expects eircom to move towards provision of circuits according to the time scales for EU best practice set-out in Table 1

[6] KPN RIO (Netherlands) & BT RIO (UK)
[7] eircom RIO and TeleDanmark (Denmark) RIO
[8] TeleDanmark RIO (Denmark). In fact 60 days from acceptance of order for interconnect links of 2 Mbit/s or less. For 34Mbit/s links, within 4 months of acceptance of order.
[9] Telia RIO (Sweden)

Table 1 above.

The targets set out in Table 1 shall apply from 31 December 2000 for the following services

- New interconnect paths on existing interconnection links using an existing PoI (capacity augmentation).
- New interconnect links using an existing PoI.
- New PoI using In-Span Interconnect (ISI).

With respect to the time scale for establishing a new PoI using Customer Sited Interconnect (CSI), eircom shall indicate to the Director by 22nd May 2000 the steps it would need to take to achieve this best practice with a view to being able to include the best practice target in its RIO by 27th June 2000.

Implementation and performance measurement of interconnection set-up times

To ensure that its commitments are realised, the Director was of the opinion that eircom should publish a clearly defined order and provisioning process (including target time scales for key milestones). She sought the industry's views on this proposal.

Views of industry

OLOs supported the publication of an order and provisioning process which should include time scales. A number requested that ODTR play an active role in helping to establish this or at least to establish a timeframe within which the process should be drafted. A number supported the notion that eircom should produce statistics monitoring its performance in this area compared to the time scales set-out. Most that supported the production of statistics felt they should be made public as an incentive to eircom to meet its commitments. One OLO thought that SLAs should be binding on eircom even for delivery of interconnect circuits that had not been included in OLO forecasts.

eircom was in broad agreement with the Director's position, but felt that pre-provisioning and provisioning sections of the O&M manual already documented the order and provisioning process in enough detail and did not need to be modified in any way.

In this respect, the Director invites OLOs to inform her office if they have any concerns with the pre-provisioning and provisioning processes (chapters 4 and 5) of the O&M manual. She refers readers to section 4.2 where the issue of SLAs for interconnection provisioning processes is addressed.

Position of the Director

To ensure that its commitments are realised, the Director is of the opinion that eircom should publish as part of the RIO, a SLA relating to the order and provisioning process (including target time scales for key milestones). The SLA should account for steadily shortening time scales, the initial impact of which is as set out above. SLAs should not be binding on eircom for circuits ordered over and above the forecast circuit number. Such circuits would be delivered on a best effort basis.

The Director notes eircom*'s* obligation under its licence to provide her with performance statistics and will address this matter with eircom separately**.**

Decision 4.3.1

eircom shall continue to use its current maximum interconnection time scales as a basis for measuring its performance in meeting its stated maximum interconnection circuit delivery time scales.

Decision 4.3.2

eircom must move to European best practice levels as set out in Table 1 for delivery of the following services by 31 December 2000:

- **New interconnect paths on existing interconnection links using an existing PoI (capacity augmentation).**
- **New interconnect links using an existing PoI.**
- **New PoI using In-Span Interconnect (ISI).**

A footnote should be inserted into its new RIO indicating these best practice time scales and indicating the date when these time scales will come into force and which shall, in any case, be no later than 31 December 2000.

With respect to the time scale for establishing a new PoI using Customer Sited Interconnect (CSI), eircom shall indicate to the Director by 22nd May 2000 the steps it would need to take to achieve this best practice with a view to being able to include the best practice target in its RIO by 27th June 2000.

Decision 4.3.3

eircom shall produce SLAs for time sensitive and performance critical elements in its pre-provisioning and provisioning processes (chapters 4 and 5) of the O&M manual having sought the views of the industry and taken due regard to any such views received. These shall be adapted in line with the reduction in the maximum circuit delivery time scales referred to in Table 1 above.

4.4 Penalties for Delays in Setting Up Interconnection Links

A target without a sufficient sanction or incentive is unlikely to be effective and the issue of penalties must, therefore, be considered. Nevertheless, it is noted that delays may result from the actions of either party, and it is important to consider both situations.

4.4.1 Penalties for delays caused by eircom

ODTR 00/16 asked if penalties should be introduced for missing the time scales for implementation of interconnect circuits set out in the RIO, and, if this was considered to be desirable, upon what these penalties should be based. Of relevance in considering this issue is the report on Service Level Agreements (ODTR 99/48[10]) that has been carried out by the ODTR.

The Director considered that if delays in implementation of interconnect circuits by the ready for service date were due to errors or omissions by OLOs, then no penalty should be applied to eircom. She suggested that the "clock should be stopped" when any delays arise due to OLOs.

Views of industry

OLOs were unanimous in their support for a penalty system to support SLAs to be used for the provision of interconnection services. They felt that eircom did not have a natural commercial incentive to provide interconnect links.

Opinions differed on what should form the basis of any penalties that might be applied. Some OLOs suggested a fixed penalty fee equal to the full connection charge for the links in question combined with some form of sliding scale such as foregoing rental for each week after the SLA ready for service date passes with no link being provided. One OLO suggested that penalties should not just be based on costs of the link, but should take into consideration additional costs incurred as result of not getting timely interconnection links and revenues foregone. A couple of OLOs supported the penalty framework set out for leased lines in ODTR 99/48.

[10] 99/48: Service Levels Provided to Other Licensed Operators by Licensees with Significant Market Power – Report on the Consultation

Some OLOs were concerned that it would be very difficult to determine when failure to deliver on time was due to eircom and when it was due to OLOs.

Finally a number of OLOs expressed the opinion that the ready for service date and not the ready for testing date should be used for measuring the point from which penalties should apply.

eircom felt that the ready for testing date should be used as the 'point in time' measurement date, and not the ready for service date. It thought that the incentive for co-operative testing might be jeopardised if the ready for testing date was not used.

eircom also regarded as unworkable the idea that the "clock should be stopped" when delays are caused to the provision of interconnection links due to OLOs. There is a period of 2 weeks in the O&M manual where testing resources are available to OLOs at three days' notice. Were OLOs to delay at this point, this resource would have to be made available potentially for an indefinite period of time, something not practical for the resource planning purposes of eircom carrier services.

Position of the Director

The Director believes penalties should be applied to eircom for failure to meet SLA timeframes for delivery of interconnect circuits.

The time point which activates the penalties should be the ready for service date[11]. Although there is an element of co-operation required to complete the testing of links, the Director feels OLOs have a strong enough commercial incentive to act to get interconnection set-up as quickly as possible. Compared to the revenue potential of having interconnection circuits in place, the level of penalties will be an insufficient incentive for OLOs to act in an uncooperative manner. The Director would be very concerned if she was to become aware that OLOs were trying to use the penalty system to force eircom to incur penalties.

Penalties should be a mixture of a fixed and sliding penalty. The full set-up charge of the link in question should be forgone by eircom if the agreed ready for service date is missed. For each extra week beyond the ready for service date which the delivery of the link is delayed, the OLO shall receive one week's rental for the link at no cost. The Director recognises that such a penalty is unlikely to reimburse OLOs for the lost revenues and/or additional charges they may incur due to delays in delivery of interconnect circuits. There is no way of determining an average financial sum that will cover such losses without over compensating some OLOs and under compensating others. Her decision in this matter is influenced by the need to strike a balance between providing an incentive to eircom to meet its interconnection obligations and the requirement not to cause OLOs to deviate their focus from providing competing telecommunication services. However, the Director does not believe that there should be a maximum penalty level for late interconnection circuit deliveries caused by eircom.

The Director does not believe it fair to expect eircom to necessarily meet the same performance levels in the delivery of interconnection circuits which are over and above the number of circuits set out by OLOs in the quarterly forecast prepared prior to the order in question. She believes that such links should be delivered on a best efforts basis within that quarter.

In determining which party is responsible for any delays in setting up interconnection links, the Director believes that the pre-provisioning and provisioning sections of the O&M manual (chapters 4 and 5) should be sufficiently clear to determine which party is responsible for delay at any point in the process. If operators find that the process in the O&M manual is not detailed enough to determine who has responsibility for any part of the process, the manual should be improved to eliminate any ambiguity.

[11] The Director notes that the performance of the carrier services arm of KPN in the Netherlands, a major stakeholder in eircom, is also measured by its ready for service timeline, not ready for testing.

The Director notes eircom*'s* concern that allowing the clock to be stopped during the testing period may be unworkable as testing resources are effectively 'on standby' for the OLO in question. The Director is not convinced that eircom*'s* testing resources need to be 'on standby' to the extent that eircom suggests. She believes that the level of testing resources available to eircom is sufficient that should OLOs delay during this phase of the provisioning process eircom will still be able to make available testing resources at reasonable notice.

Finally, the Director, despite requiring SLAs to be produced for time sensitive and performance critical elements in the provisioning and pre-provisioning sections of the O&M manual, only proposes to apply penalties to failure to deliver interconnect circuits by the agreed ready for service date.

Decision 4.4.1.1

eircom shall incur penalties for delays to the delivery of interconnect circuits caused through its own fault. The delay shall be measured from the maximum time from order acceptance to ready for service date.

Penalties shall consist of two elements:

1. **fixed charge – equal to the charge of set-up and installation of the interconnect circuit in question. This shall be incurred by eircom as soon as it fails to deliver the respective interconnect circuit on the agreed ready for service date;**
2. **variable charge – equal to one week's rental for the relevant link for every complete 7 day period after the maximum ready for service date which the link is delayed.**

There shall be no maximum penalty to be applied to eircom for the late delivery of interconnect circuits.

4.4.2 Penalties for delays caused by OLOs

If eircom incurs penalties for failure to meet deadlines for setting up PoIs, yet OLOs suffer no penalty for any delays they cause, it is possible for OLOs to request more links than they require, and then to delay their implementation, thus forcing eircom to incur unnecessary costs.

ODTR 00/16 considered whether, in order to prevent such abuse, OLOs should incur penalties for delays in set-up of interconnection points caused through their own fault rather than eircom's. She proposed that any such penalty applied to OLOs should be based on a sliding scale, not include equipment charges, be proportional to the connection charge with a maximum level that could be applied and include a reasonable margin of error to allow OLOs to order an amount over the level they forecast without incurring a penalty, but also remove SLA penalties on eircom for any such links ordered over and above the forecast level.

The Director sought views on this position.

Views of industry

The majority of OLOs disagree that they should have to pay penalties related to delays in interconnection set-up. A couple questioned the legal basis for applying penalties to OLOs. Most mentioned the fact that, unlike eircom, they do not have an incentive to delay set-up - rather the opposite. One mentioned the fact that network provisioning costs were, in relative terms, very large for OLOs, yet very small for eircom, suggesting that this is another disincentive for OLOs to try to manipulate forecasts.

A couple of OLOs explained that their orders are currently driven in part by the lack of reliability by eircom to deliver such links, thus forcing them (OLOs) to increase their forecasts to have a chance of getting the links they truly estimate will be required. They suggested that SLAs with penalties should first be implemented on eircom, and only after the effects have been observed, should the ODTR then consider the possibility of applying penalties to OLOs.

Of the OLOs that accepted that in some instances, OLOs should suffer a penalty for delays to interconnect set-up, one suggested that as OLOs have no incentive to deliberately stall when implementing interconnection links, only OLOs that persistently delay set-up should be penalised. Another stated that penalties to OLOs should only be based on direct costs to eircom as a result of the delay.

eircom thought that OLOs should be required to pay penalties for over forecasting capacity requirements. It suggested that equipment costs should be included in the penalties to be paid as equipment cannot be moved easily from one location to another.

However, eircom suggests that an OLO forecast is treated as a pre-order which allows great flexibility in modifying the OLO forecast in accordance with the process set-out in section 3 of the O&M manual. eircom felt that because of the flexibility afforded by this system, that OLOs should be obliged to order at least 80% of the final forecast.

Position of the Director

The Director wishes to emphasise that there are two issues of potential concern. The first (which was her original concern) is for delays caused by OLOs to the provision of interconnection links they have actually *ordered* or, indeed, the cancellation of such circuits prior to implementation. However, also of potential concern is the process of forecasting in advance the number of links OLOs expect to order and, in particular, the unreasonable over-forecasting of requirements, thereby possibly causing eircom legitimate costs which it cannot subsequently recover.

Concerning ordered circuits, OLOs have a strong commercial incentive to obtain interconnect as soon as possible. Revenues from serving the market are much greater than any revenues from penalties. However, the Director believes that in the case of delays, OLOs should be required to pay justified costs incurred by eircom during the provisioning stage of interconnect circuit delivery. She believes that justifiable costs will be limited for the most part to incremental labour costs as equipment is unlikely to go unused for any considerable length of time, even if it cannot be moved easily between switches, given the current development of the market in Ireland.

The Director requires that eircom proposes to her a generic penalty structure to be applied to OLOs for delays in the implementation of interconnect links due to the OLO's fault or indeed the cancellation of orders by the OLO prior to implementation. The penalty structure should be based on incremental labour charges as a result of such delays or cancellation and should only include an element for return on capital invested in equipment which has been installed. She believes that the point in time when eircom can justify that equipment is in place will be the ready for testing date. eircom may not charge any penalties to OLOs until her office is satisfied with the generic penalty structure proposed.

Charges should not be applicable until the agreed ready for service date has been missed or the order cancelled.

Regarding the over-forecasting of requirements by OLOs, the Director's objective is to create an environment where OLOs can and do forecast as accurately as may reasonably be expected. This is particularly true for the 'pre-order' values put forward by OLOs in accordance with the O&M manual for requirements relating to the following quarter. The Director believes that eircom may rightly expect these to be reasonably accurate.

Benchmarking had suggested that in most EU countries penalties are not applied to OLOs for over forecasting demand. However, such a system is in place in some countries such as

Austria, Finland and the Netherlands. Penalties are imposed on OLOs in a number of other EU countries for early cancellation of interconnect links although this is not the same as penalties for over-forecasting.

Notwithstanding OLOs' responsibility for accurate forecasting, the Director considers that it is too early to conclude whether additional penalties on 'pre-order' values (i.e. requests relating to the following quarter) are required or would be an unnecessary regulatory intervention. The Director will review this decision at such times as the impact of the SLAs and the penalties already described has stabilised become clear. At this time, she will review whether additional penalties, which might be applied to pre-ordered circuits, are appropriate.

Decision 4.4.2.1

OLOs should be required to pay the justified costs incurred by eircom as a result of the cancellation prior to implementation of ordered interconnect circuits or of any delays caused by them to the provisioning by eircom of such ordered circuits.

eircom must justify the costs it incurs as a result of OLOs delaying the implementation of interconnection links that they have ordered or of cancellation prior to order.

The Director expects such costs to consist largely of labour charges which cannot be recovered once incurred. A return on capital invested in equipment which can be proved to have been installed may also be recovered.

Decision 4.4.2.2

eircom may not recover costs incurred by the delay in set-up of interconnect links due to the fault of OLOs until the ODTR has agreed the basis on which such costs are calculated and that the costs are appropriately justified.

4.5 Customer Sited Interconnection

Several issues on CSI were not completely resolved on issue of ODTR 99/16. These include:

- pricing (addressed in section 8.3)
- the issue of interconnection extension circuits (IECs);
- the availability of higher speed circuits (greater than E1).

The Director adopted the position that the then current CSI offer should be extended to cover high capacity services in line with market requirements. This offer should include a suitable volume discount. She also required that eircom include full details of Interconnection Extension Circuits as an offering in the RIO.

She sought the views of interested parties on her position.

Views of Industry

All OLOs provided responses to this question. All were in favour of an extended CSI offer from eircom incorporating a higher capacity link that the 2 Mb link currently proposed. Three OLOs suggested that channelised STM-1 links would be an appropriate higher capacity offer. One suggested how the discount structure for these services might function: a 34 Mbit/s channelised link could be discounted at 50% to 16 discreet 2 Mbit/s links, an STM-1 channelised link could be discounted by 50% to 3 discreet 34Mbit/s links (assuming the OLO provides the multiplexer) and a channelised STM-4 link could be discounted at 50% compared to 4 STM-1s (again assuming the OLO provides the multiplexer).

OLOs were also of the opinion that Interconnect Extension Circuits (IECs) should be made available to the market. One remarked however, that IECs are more relevant to the ISI offer.

eircom stated that it has proposed the introduction of an STM-1 product (using eircom transmission facilities) which it expects to present to the ODTR in the near future. However eircom states its belief that the provision of higher bandwidth interconnection capacity is now competitive.

Position of the Director

The Director believes that the market in Ireland requires higher capacity CSI than is currently available in eircom's RIO. The Director notes that eircom is in advanced stages of preparing such an offer. In the context of separate discussions with eircom on leased line prices and offerings, eircom submitted an STM-1 product proposal on 18th April . The Director is reviewing this offering and expects a final product to be included in the RIO that is republished on June 27th.

She also notes that IECs are already included in the RIO as part of the ISI offer.

The Director notes the suggested scale discounts mentioned above. She expects eircom to address this in its offering and expect to see considerable discounts as a result of the economies of scale in providing higher bandwidth interconnection.

Since CSI circuits, by their very nature, will terminate within an eircom building, the Director does not agree with eircom that the service is competitive.

Decision 4.5.1

eircom shall present an extended CSI offer, including at least an STM-1 with channelised 2 mBits circuits, to the market in its revised RIO for republication on 27th June 2000.

Any new offer should be based on costs of provision of such services and the Director therefore expects that due to scale efficiencies, the effective price per 2 Mbit/s equivalent of the extended offer will be lower than the existing offer based on individual 2 Mbit/s circuits.

4.6 In-Span Interconnect

The Director, following the earlier consultation on the subject, did not consider that she had enough information to judge whether the current ISI offer from eircom was sufficient to meet the needs of OLOs. She therefore required eircom to consult with OLOs and to develop generic ISI products that could be published in the RIO and that would satisfy the requirements of OLOs in general.

She understood that eircom has been engaged in preparing to provide ISI services to a number of OLOs and she encouraged eircom and OLOs to work together to achieve ISI as soon as possible.

In the meantime, she sought views on her position that eircom should present an ISI offer that meets evolving market needs and publish this in the RIO.

Views of industry

Six OLOs responded to this question. There was general dissatisfaction with the current ISI offer from eircom. OLOs concerns ranged from a lack of transparency in the costing of the ISI offer (see section 8.4), that the ISI offer did not offer resilience to the fact that since liberalisation on 1 December 1998, not a single ISI has been established.

There was general support for the idea that the ODTR should set a timeframe for eircom to consult with OLOs to produce an expanded ISI offer. A number of OLOs felt that without such a timetable, eircom could delay this process indefinitely.

One OLO thought that the set-up time for ISI should be reduced from the current 26 weeks to 12 weeks, based on its experience in setting up ISI with another OLO.

Position of the Director

The Director is aware that eircom is nearing completion of the introduction of ISI services with a number of operators based on the ISI offer in the RIO.

She notes that the current ISI offer from eircom already includes STM-1 and STM-4 available in 2 Mbit/s channels. She notes that eircom is proposing to make available an STM-16 channelised offer for ISI and welcomes this move.

Concerning the timeframes for setting-up ISI, the Director has proposed in section 4.3 that set-up times for ISI be reduced to 4 months (c. 18 weeks).

Decision 4.6.1

eircom should develop and extend its ISI offer (whilst maintaining its current offer of channelised STM-1 and STM-4) having sought the views of other licensed operators and taken due regard of the views expressed .

4.7 Co-location of Interconnection Points

The issue of co-location of interconnection points was raised in response to ODTR consultation papers 98/52 and 98/60 in November 1998. Since then, the ODTR has become aware that ISPs are currently offered a form of co-location service by eircom. ISPs are able to rent PoP equipment which belongs to eircom and which is housed in eircom premises.

Co-location of equipment (on an eircom site) for interconnection would appear on the face of it to facilitate rapid and early interconnection of networks. The Director wished to identify the demand in Ireland for co-location. Respondents were asked what benefits they perceived from co-location over other forms of interconnection, what type of co-location they favoured, if any, how co-location should be costed, what operational aspects needed to be considered and what timeframes would be required for the set-up of co-location.

Views of industry

All OLOs except for one thought that eircom should present an offer for collocation to the market. A number thought that industry consultation was required in order to better define the collocation services required by the market. Submissions on this topic to the ODTR so far have not addressed the topic in great depth. Most noted that Local Loop Unbundling (LLU) will require some form of collocation to be available and that an offer should be developed now with LLU in mind.

A number of OLOs noted that collocation (or site sharing) is already offered to eircom subsidiaries and ISPs. Any operational difficulties that have been suggested by eircom must therefore be surmountable. They noted that if eircom subsidiaries are benefiting from collocation whilst OLOs do not have this option, then eircom would be discriminating against some operators (contrary to SI 15 of 1998).

A couple of OLOs felt that a good starting point for a collocation offer would be the disclosure by eircom of collocation charges and set-up times to Eircell and ISPs.

One OLO was concerned that space could be a limiting factor to a collocation offer from eircom and suggested that eircom should be obliged to offer virtual collocation free of charge when physical collocation becomes impossible due to space restrictions.

eircom stated that it expected a separate consultation on collocation before a final determination is made on the subject. It went on to outline a number of operational difficulties with collocation. These centred around building space for collocation, the reduced flexibility that this would give eircom in managing its stock of real-estate, the potential discrimination that it would be forced to employ if collocation space did run out, the specification of collocation facilities, security and access issues. Finally, eircom felt that

Directive 97/33/EC on interconnection and ONP suggests that collocation is an issue for commercial technical agreement.

eircom was of the opinion that the development of a telehousing model is a better option as this would offer fairer (equal) access to all OLOs.

Position of the Director

The Director notes that three types of collocation can be distinguished:

1. duct sharing;
2. mast sharing;
3. classical collocation – where one operator places some of its equipment on the premises of another operator.

The Director understands from eircom that duct sharing and mast sharing is already available to OLOs but notes these services are not covered by the scope of the RIO. In this decision notice she is considering the classical type of collocation where one operator places some of its equipment on the premises of another operator.

The Director notes that telehousing is not regulated by the ODTR. There is no regulatory barrier preventing the development of telehousing services in Ireland. However, if telehousing is introduced in Ireland, the Director is not convinced that this will remove the need for collocation. In particular, international experience shows that telehousing generally assists OLOs to interconnect with each other, not with the incumbent. OLOs are inclined to locate equipment in telehouses, whereas incumbents generally do not. The Director also notes that in some other EU countries such as France, and Germany, telehousing is available as well as collocation from the incumbent. This is likely to become more common as LLU requires collocation in more and more countries. Already, in 9 out of the 14 other EU countries, collocation is offered. Clearly telehousing is not a substitute for collocation.

The Director notes the problems cited by *eircom* and agrees that there are operational matters which will need to be addressed in defining a collocation offer. She also notes that currently, *eircom* rents out its own equipment to ISPs but that this service is different in some respects to an offer to house the 'foreign' equipment of an OLO on its premises.

The Director considers that the need for co-location is clear and, in accordance with Regulation 12 of SI 15 of 1998, eircom must respond to requests for co-location from OLOs. Where eircom considers it cannot meet such a request it must justify this to the Director.

In the first instance, eircom is required to behave in a non-discriminatory fashion in the treatment of its own downstream arms and subsidiaries compared to the treatment of its competitors. Therefore eircom must offer to OLOs the same service that it offers to its downstream ISP arm, i.e. the facility to rent eircom equipment within an eircom premises. This offer should be included in the RIO.

Second, the Director notes the many operational issues that remain to be resolved between eircom and OLOs. As already stated, eircom is obliged to negotiate with individual requesting operators. Without prejudice to this, the Director has announced in paper ODTR 00/30[12], that the ODTR will facilitate an industry forum in which such issues can be addressed. The Director expects that the operational issues addressed in that forum should cover co-location offerings for LLU and interconnection.

Decision 4.7.1

eircom is obliged in accordance with Regulation 12 of SI 15 of 1998 to enter into negotiations where an operator requests co-location as part of an interconnection service. Any inability to provide the requested service must be justified to the Director.

[12] Local Loop Unbundling - Decision Notice D6/00 and Report on the Consultation

Any co-location service offered to its own downstream arm (including a service based on rental of eircom equipment) must be included in the RIO on a non-discriminatory basis.

4.8 Uni-directional versus Bi-directional Interconnect Links

Interconnection links in Ireland only carry traffic owned by one operator. The operator that bills the end-user is usually said to "own" the customer. This means that calls by subscribers of an operator, eircom for example, to another network operator are owned by eircom. Likewise calls made by an OLO customer using indirect access through eircom's network would also be eircom owned traffic as the customer in this scenario is also billed by eircom.

Such links are known as uni-directional links. If an operator does not dimension a particular uni-directional interconnection link correctly, this may lead to calls to other operators' networks failing. This denies the operator hosting the number called, valuable call termination revenues and it may also provide a bad impression of the called operator's network if the calling party happens to know to which network operator the called party subscribes.

Some OLOs have expressed concern that the links which originate and carry calls from eircom to OLOs are not of a sufficient capacity to handle all the calls made, leading to the problems described above. In such instances, both operators will lose call revenues, but these will be a much large proportion of total call revenues for OLOs than for eircom.

Industry views were sought as to the viability of introducing bi-directional interconnection links that carried traffic owned by both operators in either direction. Respondents were asked for their opinions as to which operator should be responsible for the dimensioning of such a link and on what basis, how disagreements should be resolved, how the cost of the link should be split and how resilience should be provided.

Views of industry

Six OLOs commented on the position as described. Five of them thought that some form of bi-directional interconnection links carrying traffic owned by both interconnecting parties, should be made available in the RIO. However a couple of OLOs acknowledged that the use of bi-directional links may be limited to operators in early phases of entry into the market or to those having difficulty getting eircom owned traffic on to their network because of insufficient capacity on the links carrying eircom owned traffic to OLO networks. In this instance, bi-directional links carrying traffic owned by both interconnecting operators was seen as a temporary measure to relieve short term capacity problems. Concerns were voiced that bi-directional links should not be used by eircom to circumvent SLA commitments on uni-directional links.

One OLO suggested that in order to help set-up a framework for bi-directional links and other new services, an industry technical forum similar to that of the NICC in the UK could be formed. It requested that the ODTR initiate such a forum.

All OLOs agreed however, that technical difficulties with bi-directional interconnect links could be overcome.

eircom remained unconvinced that the marginal benefit to OLOs justifies the considerable operational complexity of implementing bi-directional links.

Position of the Director

The Director notes that it is technically possible to offer bi-directional links carrying traffic owned by two interconnecting operators but appreciates the additional administrative complexity that may result. Nevertheless, she considers that the requirement for bi-directional circuits reflects a genuine market need even if this need may be short lived. This is justified by the fact that a number of operators claim, due to poor dimensioning of links by eircom, to be experiencing difficulty in getting eircom owned traffic onto their networks for termination. These operators believe that the use of bi-directional links will help to ease such difficulties. She therefore requires eircom to provide as part of the RIO bi-directional circuits or make existing uni-directional circuits bi-directional whilst there is evidence of inadequate capacity from eircom to OLOs. Pragmatic billing arrangements will be agreed between the parties which the Director will review if necessary.

Decision 4.8.1

The Director requires eircom to provide as part of the RIO bi-directional interconnection links.

4.9 Second Interconnection Link

Presently, an interconnecting OLO is required to purchase a minimum of two 2 Mbit/s links when it wishes to interconnect with eircom. A cancellation charge of £3,500 is applied to an interconnecting operator if it either cancels an interconnect link within 12 months of commencement of interconnect service for the link in question or if it does not take up the second 2 Mbit/s link that it is required to order from eircom within 12 months of taking up the first link.

After an initial consultation, the Director was of the opinion that OLOs should only be required to order a minimum of one 2Mbit/s link from eircom. If interconnection links were subsequently cancelled within one year of the bringing into service date, or not taken up at all after being ordered, she was of the opinion that the OLO should pay for costs incurred by eircom which were not recoverable. She judged these to be labour costs only.

Comments on her positions were requested.

Views of industry

Six OLOs commented on the requirement for a second link. Three stated expressly that no justification for a second link had been given and that this was not in their opinion required. The other OLOs felt that the tying of a compulsory second link to a cancellation charge was unfair on new entrants.

Concerning the cancellation charges, 6 OLOs also responded specifically to this point. 2 thought that there should be no cancellation charge. The others were in general agreement that any charge should be justified and were of the opinion that labour costs could be justifiably recovered.

eircom explained that its reason for requiring a minimum of two 2Mbit/s links on each path derives from its own network design principles used to ensure sufficient resilience. It pointed out that small OLOs stood to lose the most if this was not implemented as they are less likely to have an alternative route over which traffic can be routed. It felt that at the least, a minimum of two 2Mbit/s links should be maintained at tertiary nodes, thus leaving an alternative route over which traffic can flow if necessary.

Concerning the cancellation charge, eircom cited cost of capital tied up in the unused equipment, costs of ancillary equipment and accommodation and transportation costs if the equipment had to be used at another node as justification for the cancellation charge.

Position of the Director

The Director proposes to maintain her previous position that OLOs should not be required to order a minimum of two 2 Mbit/s circuit on any interconnect path.

The current option to delay the implementation of a second link for one year seems to have no logic as it leaves the possibility that a single link may exist for up to 1 year between an OLO and eircom. Furthermore, by paying the cancellation fee the OLO can circumvent the requirement entirely. The second link is either required or it is not; eircom by accepting the cancellation charge in lieu of the second link demonstrates that the second link is not actually necessary.

Concerning the cancellation fee, the Director maintains her position that it is reasonable to charge a fee for either cancellation of a link within 1 year of its ready for service date or an ordered circuit which is subsequently not taken up (see section 4.4.2). However, she notes that eircom has failed to justify the level of such a cancellation charge and proposes that this should be based only on labour costs for installation of the link in question. She believes that at the current stage of market development in Ireland, the demand for interconnection is such that it will be possible for eircom to reuse equipment at the exchanges where it may have been installed.

Decision 4.9.1

The requirement for a second link should be removed from the RIO. The Director considers that it is reasonable to charge a cancellation fee if a link is used for less than one year but that charges in such circumstances should relate only to labour costs.

5. Call Origination

This section specifically addresses the call origination services and specific characteristics of this service, including how call origination may differ from other conveyance charges such as call termination or transit.

For clarity it has been divided into three components:

1. separate call set-up and call conveyance charges (2-part charging);
2. different network cost elements used in call origination compared to call termination or transit; and
3. call origination as a competitive service.

As indicated in 00/13[13], the current work on LRIC modelling is an exercise of bottom-up modelling of basic conveyance services. There are three directions of its development:

Firstly, the Director intends to refine the modelling initially by comparing the outputs of bottom-up modelling against the most relevant figures available from eircom. In the short term eircom has indicated that these figures will not be outputs from their top-down modelling work but the Director remains keen to receive outputs from eircom's top-down model at the earliest possible date.

Secondly, the Director is considering enhancing the model to differentiate between the costs associated with call set-up and those associated with call conveyance recognising that direct causation only accounts for part of the potential differentiation and likewise to differentiate between call origination and call termination.

Thirdly, the Director appreciates the desire of industry to extend the scope of the model to embrace new services. She plans to extend its scope as indicated elsewhere in this document though not to operator assisted services whose costs are principally operating expenditure (see section 8.10).

5.1 Call Set-Up Component of Conveyance Charges

In document 98/52, the ODTR acknowledged the issue of call set-up costs for both successful and failed calls and the issues surrounding their identification and methods of charging for them. It is possible to charge for these through a call set-up fee or by including the costs in the duration based charges. The ODTR understands that both the call profile of an interconnecting party and assumptions about average call holding times impact upon the balance between call set-up charges and time-based charges.

In its initial draft interconnection tariffs, eircom proposed that 16% of costs should be attributed to call set-up to calculate a set-up charge based on '24 hour costs'. eircom proposed the inclusion of an additional call set-up premium for call origination and a further, different, figure for transit calls.

At the time, the ODTR was unconvinced of the principle that cost components of switching could be sensibly divided in a transparent manner between the cost of call set-up and the cost of conveyance. The key reason for this was that the call set-up and the conveyance elements of the service were not offered or bought separately. Therefore, the Director concluded at the time that there should be no explicit call set-up component in interconnection charges and that such costs associated with call events should be included in the overall cost of conveyance. She did however, recognise the need to review this decision as the telecommunications market develops. Respondents were asked for their opinions.

[13] Interconnection Rates in the Irish Telecommunications Sector – Status Report

Views of Industry

A couple of OLOs acknowledged that there are different cost drivers for call set-up as opposed to call conveyance although they felt that as long as eircom recovered overall cost, these should remain as a single per minute bundled charge.

A majority of OLOs thought that were a separate call set-up charge to be introduced in interconnection rates, it should be introduced in retail tariffs too. One remarked that take up of new services could not be influenced unless a separate call set-up charge was introduced at the retail level. There was concern that split of set-up and conveyance charge at interconnect level, but not at the retail level could squeeze margins of operators on business calls, which tend to be shorter than domestic calls.

Some OLOs felt there was not yet enough transparency to split set-up and conveyance charges. A couple thought that the LRIC model being developed might provide evidence to support a separate call set-up charge. However, there was acknowledgement that average call lengths are increasing, thus introducing the risk that eircom may over-recover on the set-up element of average call charges unless this is addressed by retrospection of charges.

There was concern that costs eircom is using to determine call set-up charges is historic and not those of an efficient operator of a modern network.

A number of OLOs were concerned about the additional charging complexity of separate call set-up and conveyance components.

eircom stated its belief that the bundling of set-up and conveyance charges into a per minute charge has the effect of subsidising short calls with longer calls. Most short calls are business or business related calls, whilst long calls are typically associated with dial up Internet services. Dial-up Internet users were being unfairly penalised by being forced to subsidise business calls whilst a single charge remains in place.

It made reference to Oftel's recent proposal[14] to introduce 2-part charging in the UK for calls to non-geographic numbers and its current consultation on the UK price control review[15] where Oftel is seeking to what extent 2-part charging should be applied to all types of calls.

eircom rejected the principle that retail and wholesale rates should be directly linked.

eircom also commissioned a study by Ovum, an independent telecoms consultancy. In its report, Ovum concluded that two-part charging is already used in 5 of the 15 EU countries. It also stated that eircom has established internal systems and processes to determine set-up and call duration charges (although Ovum states that these systems are not yet mature and should not yet be relied upon) and that eircom's mediation and billing systems are capable of supporting 2-part charging and will be enhanced in this respect by April 2001. Ovum recommended the establishment of call set-up charges in Ireland this year, and that a combination of historic data, existing rates and benchmarking be used to set these. Ovum carried out a benchmarking exercise based on 7 European incumbents using 2 part charging and determined that an average charge of call set-up was 0.52 pence. Ovum recommended that any set-up charge should be no higher than this.

Position of the Director

[14] Oftel's Statement on the Relationship between Interconnection Charges and Retail Prices for Number Translation Services (December 1999)

[15] Oftel: Price Control Review: A consultative document issued by the Director General of Telecommunications on possible approaches for future retail price and network charge controls, March 2000

The Director recognises that the nature of the market has changed over the past year and will continue to change. There has been a marked movement away from the standard call distribution. The emergence of three types of ‘standard’ call can now be seen; dial-up Internet calls (longer than average), calls to mobile phones (shorter than average) and the original standard call which has a duration of approximately 3 minutes. She recognises that the introduction of 2-part call charges should, in light of these observed changing calling patterns, send correct signals to the market concerning the underlying costs driving call charges. However, she is concerned that there is a lack of transparency in how eircom will determine its two part charging rates, how it will split the price of a call between set-up and conveyance costs. She is concerned that eircom’s internal systems are not yet mature enough to make a robust estimate of call set-up costs.

Concerning the link between retail tariffs and wholesale or interconnect charges, the Director recognises that operators are free to use whatever retail charging structure they wish. Although mirroring the interconnect charging structure will in theory allow the same margin to be earned on all services, this is not necessary in practice.

The Director is unconvinced that benchmarks should be used to determine the absolute levels of a new charging structure since eircom may justifiably be expected to have available the data needed to demonstrate where different costs should be allocated. However, she recognises that the issue of two part charging has moved from ‘if’ to ‘when’. It is in this context that the Director welcomes further information from eircom that will allow her office to determine a fair call set-up charge that accurately reflects eircom’s own call set-up costs.

Decision 5.1.1

There should be no explicit call set-up component in interconnection charges until such time that eircom can justify these costs, and such costs should in the meantime be included in the overall cost of conveyance.

5.2 Different network cost elements used in call origination compared to call termination

eircom has argued that there are different cost elements associated with call origination compared to call termination and that the costs based charges for each type of service should be distinguished. ODTR accepted in 98/52[16] that there may be different costs for call origination compared to call termination. However, based on the fact that at the time, eircom had failed to produce sufficient information to justify what these differences were, the Director decided that eircom should not be permitted to charge different rates for the two services.

Views of industry

eircom agreed with the Director that call origination and call termination should be based on costs. eircom referred to ODTR 98/52[17] in which the ODTR recognised that there are costs which relate specifically to call set-up. It stated that contrary to an earlier position adopted by the Director, it believes that call set-up may soon be available as a separate service from operators with the development of Number Portability and Carrier Pre-Selection.

eircom further pointed out that the costs for origination and termination are different due to the additional network elements involved in call origination. eircom have estimated that costs for call origination should be 5 to 10% higher than for call termination, but have not given sufficient information to fully support this claim.

One OLO pointed out that a number of the call set-up components used in call origination are also used in call termination if a call is handed over at a tandem switch (which is currently

[16] 98/52: Interconnect Rates in the Irish Telecommunications Market
[17] Ibid.

normal practice) thus limiting the difference in costs between call origination and call termination. eircom believes that the current practice of applying a single rate to both call origination and call termination results in a subsidy from call termination to call origination.

Position of the Director

In light of the fact that eircom have provided no further substantial information to support the introduction of separate call origination and call termination charges, she proposes that interconnection charges for origination and termination should remain identical.

Decision 5.2.1

eircom shall continue to charge the same rate for call termination and origination until it provides evidence to support the materiality of any difference which may exist in network cost elements used in the provision of call origination and call termination.

5.3 Call Origination as a Competitive Service

It has been suggested that call origination may differ from call termination not only by the fact that there may be different costs associated with call origination compared to call termination, but also because call origination could in theory be a competitive service were enough competing access providers to enter the market. The suggestion was made that if LRIC costing was applied to call origination services (mimicking an efficient competitive operator), then the returns to potential new entrants to this market could be so low as to discourage investment. Views were sought as to whether call origination is a competitive service.

Views of Industry

The majority of OLOs did not believe that call origination could be considered a competitive service in Ireland. They felt that call origination and termination charges should both be derived using LRIC based costs. Some felt that there was no competition in call origination whilst OLOs were limited to offering indirect services.

Only one OLO felt that LRIC costing methodology should not be used to set call origination charges fearing that this would depress the returns available to operators developing competing access networks and dissuade investment. It felt that this would allow eircom to maintain its stranglehold on the call origination market in the long-term. Another OLO however suggested that there was no evidence that LRIC costing for call origination had reduced investment in alternative access facilities in other countries.

eircom felt that call origination is a competitive service as there is a choice of direct or indirect access to OLOs.

Position of the Director

The Director is unconvinced that the market for call origination is competitive in Ireland. The ODTR estimates that eircom still has a 93% share of the telecommunications market in Ireland[18]. She therefore believes that call origination like call termination should continue to be regulated and that the charges of eircom should be based on costs, which should, so far as is possible, be based on the costs of an efficient operator using a LRIC costing methodology.

Decision 5.3.1

The Director does not consider that there is sufficient evidence available at present to support the assertion that call origination is currently a competitive service or will become one in the near future. She intends to continue to regulate both call origination and call termination until further notice.

[18] The Irish Telecommunications Market Quarterly Report – December 1999 to February 2000 – ODTR 00/21

6. New Services

Innovation in the provision of telecommunications services is a fundamental concern of the industry and users alike, and the Director has expressed her concern to ensure an environment that promotes such innovation. In this context, the Director noted the rapid and continued development and implementation of new technologies where software tools are used to combine different hardware components into new services. The Director therefore re-emphasises her commitment to a regime that supports the unbundling of interconnection elements to the greatest practical degree possible thus facilitating all operators to develop their own new services.

The Director has also noted the need to ensure that eircom's network division treats OLOs in an equitable manner relative to that in which it treats its own retail divisions and subsidiaries.

In terms of the legislative background, Regulation 8 (12)(a) of SI 15 of 1998 states, "an organisation providing interconnection shall ensure that charges for that interconnection shall be sufficiently unbundled so that an applicant is not required to pay for anything not strictly related to the service requested…"

With these fundamentals in mind, the Director considered in ODTR 00/16 the unbundling of service offerings, the need for procedures to expedite the introduction of new interconnection services, the relationship between retail services and interconnection services, and a specific issue relating to public call boxes.

6.1 Unbundled service offering and procedures for agreeing the introduction of new interconnect services

In the interests of supporting innovation, it is important that there is sufficient transparency in the market for interconnect services and that the time scales for setting-up interconnection supporting new services are not too long. The Director sought the industry's views on:

1. whether eircom should provide an up-to-date list of unbundled interconnect elements with prices for each, as supplied to its downstream retail divisions and subsidiaries;
2. whether all new interconnect products should be made available as far as possible in an unbundled format;
3. whether the current time scales for implementing new interconnect services should stand;
4. whether eircom should consult with OLOs then submit a proposal for a streamlined procedure for new service requests including full process time scales and a pro-forma setting out all information requirements which can then be used to create an associated SLA.

Views of the industry

The OLOs expressed general support for Director's suggestions. Most OLOs explicitly supported the proposal that eircom should provide a list of unbundled interconnect elements.

Eircom's current time scales for introduction of new services were viewed as too long. 6 weeks was suggested by a couple of OLOs as an appropriate time scale.

The introduction of formal processes for the introduction of new services, was also supported by the majority of OLOs. Some suggested that the ODTR should set timeframes for its development fearing that it may otherwise be delayed indefinitely.

eircom stated its broad agreement with the Director's suggestions. However concern was expressed as to the clarity of some definitions and objectives. eircom expressed a concern that it should not be obliged to offer retail services to OLOs at cost.

Position of the Director

In order that OLOs can compete on an equal footing with eircom retail, eircom should provide a full list of unbundled interconnection products (e.g. network products and interfaces that support retail products) within its RIO. The level of unbundling should be the same as that offered to its retail division or subsidiaries, i.e. any elements that are offered on a stand alone basis to an eircom subsidiary or retail division should be listed and priced based on cost of provision. The Director suggests that this full list of interconnect elements, along with charges, be included as an annex in the RIO. This list should be updated at least twice per year. She further suggests that each service schedule in the RIO should include a list of the interconnection elements used to provide the service.

She believes that eircom should notify OLOs of the introduction of a new interconnection service (or interconnection element) giving OLOs the notice required for OLOs to order this new service and have it delivered by eircom at the same time as eircom's retail business first utilises the service. This will ensure a level playing field between eircom retail and OLOs.

To assist OLOs requiring eircom to develop a new interconnection service, eircom should develop a standard 'Statement of Requirements (SOR)' document which should set out the information eircom requires from an OLO in order to be able to initiate the development process of the new interconnection service. A meeting between eircom and the OLO should then follow shortly after the submission by the OLO of the completed SOR document. This process should be confidential between ‘eircom carrier services’ and the OLO (e.g. not disclosed to eircom retail or other OLOs) and only when the service is developed and defined should it be launched into the RIO under the same terms as if the service had been developed by eircom for its own retail business. eircom's current RIO sets a maximum time scale for the agreement of technical and commercial parameters for new interconnection services of 75 days. The Director believes this should remain the maximum time scale but that eircom should work with OLOs to reduce this.

To help develop the above methodology and improve it, the Director requires eircom to define a streamlined methodology that can be used for the introduction of new interconnection services and elements along with an accompanying SLA. eircom should seek the views of industry and take due regard of those it receives. The Director requires that such a process should be proposed within 3 months of the publication of this decision notice.

The above process secures the incentives and advantages of innovation whilst ensuring that the eircom network is available to all operators on a non-discriminatory basis.

Decision 6.1.1

eircom shall provide in it's RIO a full list of unbundled interconnection products and network elements. The level of unbundling should be the same as that offered at this time to its retail division or subsidiaries.

Decision 6.1.2

eircom shall develop a standard process for the development and introduction of new interconnection services and elements, including standard documentation and time scales. A SLA should be drawn up to support the timeframe for the introduction of new interconnection services. Initially, a SLA based on existing processes and timeframes shall be proposed by eircom within 3 months of the date of the Decision. In making its proposal eircom shall seek the views of industry and shall take due regard of the comments received.

6.2 Introduction of New Retail Products

In addition to seeking views on the unbundling of interconnection elements, the Director also sought opinions on whether eircom should be required to introduce new interconnection products before introducing any retail product. The Director noted the need to set this discussion within the context of eircom's significant power in the Irish telecoms market and the appropriateness, or otherwise, of asymmetric measures in respect of new retail products.

ODTR 99/16, the original consultation on the eircom RIO, proposed two asymmetric measures. Option A required eircom to alert OLOs of all its discussions between retail and network divisions concerning new interconnection services while option B would impose a delay on the introduction by eircom of any retail service dependent on new interconnection service elements until those elements were available in the RIO. Only details of the interconnection services should be made available to OLOs; details of the retail service should remain confidential until notification of its launch.

After receiving and considering responses from the industry, the Director took the position that Option B was the most desirable – that interconnection elements should first be available in the RIO before any retail services bases on them could be introduced. She nevertheless required that ODTR be informed in commercial confidence of "substantive" decisions between eircom network and retail or subsidiary relating to new interconnect services. This information would then be used to make an informed judgement on the length of time the new interconnect elements had to be available to the market before eircom could introduce a new retail product based on them. The Director sought the views of industry on her position

Views of Industry

OLOs were in agreement that they should be in a position to use a new interconnect service or element in the same timeframe as eircom. The majority thought a 4 week lead time between introduction of an interconnect element into the RIO and launch of a retail product on the back of this was the minimum acceptable period. Some thought it was too short. One suggested that the period of delay should be three months. Another suggested that the delay should be linked to the time it would take an efficient operator to launch a retail product at the same time as eircom (assuming the operator knew what retail product eircom was planning – this would not necessarily be the case as the Director never intended to make this information public before product launch).

Some OLOs expressed concern as to the definition of "substantive decisions" and suggested that a clear procedure needs to be defined with agreed responsibilities. One OLO thought the substantive decisions between eircom network and eircom retail or subsidiaries should be communicated not just to ODTR, but to the whole industry. It also suggested that ODTR should carry out retail price testing to ensure that no anti-competitive behaviour was being adopted by eircom before allowing a new retail product onto the market.

eircom agreed with the regulatory principle, but was concerned about the practical implementation. It requested clarification on what might constitute a "substantive decision".

eircom felt that a 4 week delay between introduction of interconnect elements into the RIO and introduction of a retail service based on the new interconnection elements was simply too long and suggested that R&D spending in eircom would likely be curtailed if investors could not be guaranteed returns that would likely arise from a strong first-mover advantage on the part of eircom.

Position of the Director

The Director has dealt with some of the issues in section 5.2 above. Below she clarifies the situation as regards to the introduction of new retail services that use new interconnection services or components.

Given some of the points raised by the Industry as to what constitutes a substantive decision and the difficulty with making decisions as to the delay before a retail product can be launched onto the market, the Director considers the following process, which fosters innovation yet allows other operators to develop competing retail services, is appropriate.

All operators (including eircom retail and subsidiaries) should be able to negotiate new interconnect products in full commercial confidence with eircom carrier services to support new retail products.

Once a new interconnection product has been agreed and finalised, it should be published in the RIO. No retail product should be launched for that period between the publication of the new service in the RIO and the point in time when another operator could also have access to the same interconnect element or service. For example, if it takes 2 weeks between request for an interconnect service and delivery of that service, no retail product could be launched for two weeks after publication of the new interconnect service in the RIO. This would give the innovating operator a head start in the market place (as other operators would not have the advantage of knowing what retail product to offer with the new interconnection service) and would reward its innovation. At the same time, this process will allow other operators full and simultaneous knowledge of the interconnect products available so that they can develop services based on the underlying interconnect elements as quickly as their innovation allows.

The process and accompanying SLA for introducing new interconnection services to the market (see section 6.1) should ensure that eircom cannot unduly delay the introduction of new interconnection products requested by OLOs.

Decision 6.2.1

eircom shall offer new interconnection services and elements to other OLOs with such notice that the OLOs can order and have the new service delivered by eircom at the time that the associated retail service is launched by either eircom or the OLO that initiated the development of the new service.

6.3 New Services Requested by the Industry: Carrier Selection and Carrier Access from eircom Payphones

Currently, it is not possible to use carrier access and carrier selection services from eircom payphones. The question was posed by the Director in 99/16 whether eircom should make these services available from its payphones and if so, how relevant costs might be recovered.

After receiving replies and considering them, the Director concluded that carrier selection is already available from eircom payphones using a freephone number to access the service. Despite the fact that costs to OLOs of providing carrier selection in this manner is more costly than through a short carrier selection code, she felt that the costs that would be incurred due to modifications to eircom payphones would not outweigh the benefits that might be gained by consumers if they had access to carrier selection using short codes from payphones. She sought comments on her position.

Views of Industry

Of the OLOs that expressed a view, the majority did not agree with the Director's position. They felt that payphones were like the rest of the eircom network and should be treated in the same way. Other arguments included a belief that the number of carrier selection calls will be very low from eircom payphones therefore the loss in revenues to eircom will be negligible, payphone costs are easy to identify and could be recovered in a separate charge and the fact that as a result of the higher costs associated with carrier access from payphones, all OLO customers are being penalised.

eircom agreed with the Director's position that as OLO networks can be accessed via a freephone number, that it is not necessary to also offer access to OLO networks via short carrier access codes.

Position of the Director

Payphones cannot be treated identically to other parts of the eircom network. No line rental is paid nor rental to maintain, clean and power the payphone boxes. eircom may justifiably expect to recover such costs although it is important that the costs are recovered over the generality of calls made from payphones. This matter is being separately considered by the Director and is not part of this review.

The Director notes in the specific context of call to carrier access codes that consumers can already access OLO networks from eircom payphones using a freephone number although accepts that the use of carrier access codes could benefit OLOs and their customers. She also understands that extra software may be required in the eircom payphones and at eircom switches in order to allow access to OLO networks using a short carrier code. She does not feel that it is unreasonable that OLOs be required to pay the justified and appropriate cost of the installation of this software if they want to offer the option of carrier access from eircom payphones.

She requires eircom to provide OLOs requesting this service with an estimate of the cost based charges of making call origination to their networks possible using short carrier access codes from eircom payphones. eircom should furthermore justify the proposed costs to ODTR and ensure that they are based on efficient arrangements. It is matter for eircom and OLOs to conclude commercial negotiations on this matter in the light of this infromation.

Decision 6.3.1

eircom is required to provide an estimate of the charges for this service to OLOs requesting call origination from eircom payphones via a short carrier access code.

Such charges shall be based on reasonable costs and be fully justified.

7. RIO Management Processes

It is important that a balance is struck between ensuring that that RIO is as up-to-date as possible, and the effort involved in keeping it up to date by all parties (eircom, OLOs and ODTR). In this section, review procedures are considered along with the important issue of retrospection.

7.1 Review of RIO

There is currently no formal process for updating eircom's RIO and reviewing the updates. The Director considers that the establishment of a regular process will result in a more efficient use of time and resources.

A suggestion had been made that the review might be split into two with a bi-annual review of services and an annual review of the costs of these services.

Following widespread consultation of the industry on this issue, the Director's position was that:

1. She would review the generality of prices of all the services in the RIO on an annual basis.
2. She would review all the services in the RIO on an annual basis in the future, but given the current stage of market liberalisation she intended to review services bi-annually for the time being. This would include consideration of new services as well as, where appropriate, proposals by interested parties that certain services be removed from the RIO as they were considered to be provided in a fully competitive environment
3. She reserved the right to investigate individual services and prices at any time outside these review dates.

The O&M manual includes details of ongoing activities and procedures relating to the forecasting, pre-provisioning, provisioning and operating interconnection facilities. Should the O&M manual itself need updating then the procedures above would also be followed.

The Director sought the views of industry as to the positions that she had adopted.

View of Industry

All OLOs agreed with the RIO review process suggested by the Director.

One OLO suggested that the structure of the RIO should change so that prices be presented in a separate interconnection price list. It also thought that the ODTR should require eircom to initiate updates of the O&M manual at regular intervals, but stressed that the O&M manual has to be seen as a separate document from the RIO.

eircom agreed with the positions of the Director.

Position of the Director

Given the broad agreement of the whole industry, the Director proposes to maintain her previous positions on the process to be adopted to review the RIO.

Concerning reviewing the O&M manual which includes details of ongoing activities and procedures relating to the forecasting, pre-provisioning, provisioning and operating interconnection facilities, as this is not to be considered an integral part of the RIO, the Director looks to the co-operation of eircom and OLOs to keep this up-to-date. If she receives information that the O&M manual is not sufficiently up-to-date and there is no evidence that OLOs and eircom are taking steps to correct this, she may direct eircom to initiate an update.

Decision 7.1.1

The Director will review the generality of prices of all the services in the RIO on an annual basis.

In the longer term she will also review all the services in the RIO on an annual basis. However, while expecting that commercial discussions will inform the bulk of alterations to the RIO, given the current stage of market liberalisation the Director intends to review services bi-annually.

The Director reserves the right to investigate individual services and prices at any time outside these review dates.

Decision 7.1.2

The Director expects the industry to keep the O&M manual up-to-date. Given that it is a living document, it is impractical for her to propose updates. However, should she find that the O&M manual is out of date compared to the RIO, she may direct eircom to initiate an update.

7.2 Retrospection of Charging

Interconnection costs must initially be based on forecasts, and may not be as accurate as a result. Acknowledging this difficulty, ODTR 99/16 suggested that the true costs of interconnection might be assessed annually when regulatory accounting information is produced by eircom, and prices adjusted retrospectively.

The Director sought views on the appropriateness of applying such retrospective charges. She also sought opinions as to whether such a process should be applied to all interconnection services or only certain services.

After the initial consultation 99/16, the Director was of the opinion that:

- where there was a material difference between the interim and final rates, final rates should be applied retrospectively;
- retrospection should apply to all charges covered in the RIO, both conveyance and non-conveyance;
- she reserved the right to review specific prices at any time.

She adopted the position that retrospection should be reviewed annually and be based upon the actual traffic, operational and cost measures that occurred in the past year. The annual review of charges should be on all the interconnection services within the eircom RIO and should determine the final charges applicable for the accounting year or period gone by including interest where appropriate. It should also estimate charges that would apply on an interim basis from that date forward. Where the charges determined as final for any particular year or period were materially different from those that had been previously estimated for that period, the final charges should apply retrospectively.

She sought views on her position.

View of Industry

OLOs felt it important that the Director should be able to review specific prices at any time.

Retrospection should be applied in the first instance to the most significant interconnect services such as termination, origination, transit, international rates and interconnection paths.

Other principal points raised by individual operators were that:

- there is a lack of transparency in how interim and final rates are set;
- a timetable for introducing interim and final rates would be appreciated;

- interim rates should include adjustments for expected improvements in efficiencies;
- ODTR should move to a CPI-X approach for the regulation of interconnection paths as inter-company billing and settlement is complicated and time consuming;
- retrospection should be applied back to date of launch of relevant interconnect service; and
- any reduction in interconnection rates should take recommendations from the EC into consideration.

eircom stated that retrospection is a costly exercise due to the requirement to keep call records and that it increases uncertainty in the telecoms marketplace.

It thought that retrospection should be concentrated on principal interconnection services and applied only in instances where the difference between interim and final rates is substantial. It raised the point that where OLO interconnect rates are based on eircom rates, the application of retrospection should be reciprocal.

Finally, eircom thought that final rates should not be applied to services deemed competitive during the relevant period.

Position of the Director

The Director believes that it is prudent to examine all interconnection services in the context of retrospection, particularly in the early years of the process. However, she will apply retrospection only where material differences exist between interim and final interconnection rates and where such a difference has a material impact on OLOs, i.e. where the difference is a significant percentage of the OLO's overall annual interconnection bill. This will lessen the costs incurred by eircom and OLOs in calculating retrospection payments.

The Director will retain her right to review specific prices at any time in accordance with her statutory duty.

In setting interim rates expected efficiency improvements would continue to be considered.

A price cap formula may be suitable for interconnection rates in a mature de-regulated market. However, the Director believes that the Irish market has not yet reached the level of maturity that would be required for the application of such a formula. A price cap formula will necessarily sacrifice some accuracy for ease of implementation and the certainty that it provides. In order the reach a point where the market is ready to forego exact cost data on which to base interconnection charges requires a far greater knowledge and transparency of interconnection costs and cost trends than will be available for some time yet in Ireland.

It is not necessarily correct to apply new interconnection charges back to the date when the relevant services were first introduced as relevant costs may genuinely have been different when the service were first introduced. As with the point above, this may result from the different efficiency and technology factors in calculating unit costs from one year to the next.

Finally, the Director is conscious of all recommendations concerning interconnection rates from the EC and takes these into consideration when making determinations

Decision 7.2.1

The Director will apply retrospection on an annual basis following calculation of final interconnect rates.

Retrospective rates shall be calculated for all services, but shall only be applied where there is a material difference between interim and final interconnection rates on the revenues of operators.

PART III - Costing and Routing Principles

In this section, a number of issues relating to the prices charged for interconnection services are discussed as well as the related issue of routing calls requiring interconnection. Many of these issues have been raised before. They are revisited here because either there was insufficient time during the liberalisation process to resolve completely the various concerns of the parties involved, or new and relevant data are now available.

Areas covered include:

- Costing and Routing Principles
- ROCE
- Customer Sited Interconnect
- In-Span Interconnect
- Billing and Carrier Administration Charges
- National Transit
- Projected Minutes
- Time of Day Dependant Charging
- National Termination
- Operated Assisted Services
- Data Build & Modification
- Packet Switching Services
- Access to Paging Services
- Emergency Services
- International Access Traffic
- Access to the Directory Database
- Routing principles
- Routing factors for eircom originating and eircom terminating traffic

8. Costing Principles

8.1 Cost Review

Section 7.1 of this report looks at the RIO management processes and quotes the need for an annual review of costs which should be allowed for the purpose of retrospection. The principle of retrospection means, in principle, that the interconnection rates used during a year would be interim.

Since ODTR 99/16, when the Director proposed a review of interconnection costs on an annual basis with the results of the first of these reviews due on 1 December 1999, the interconnection market in Ireland has moved on and the original proposal of the Director is no longer possible or appropriate. Interested parties are referred to ODTR 00/13[19], ODTR 00/14[20] and ODTR/15[21] for further details.

In summary, in ODTR 00/14, the Director, after reviewing cost information from eircom, determined that the interim rates from 1 December 1998 to 30 November 1999 should remain as final rates for this period.

In ODTR 00/15, she accepted new interim interconnection rates proposed by eircom for the period from 1 December 1999 to 31 March 2000.

The Director proposed that the current ongoing review of the generality of prices would be concluded and applied in order to set interim prices with effect from 1 April 2000. On conclusion of further work on Long Run Incremental Costs during 2000, she suggested that interim rates might be further reviewed.

Interested parties were asked to comment on the Director's proposal.

Views of Industry

Two OLOs commented on the final rates to 1 December 1999. Both expressed a concern that in their view there had been a lack of transparency in the process that had been used to determine the final rates.

Concerning the interim rates from 1 December 1999 to 31 March 2000, OLOs expressing an opinion welcomed the new rates.

On the issue of future rates, in addition to requests from two OLOs for a greater level of transparency in the price setting process, those OLOs expressing views were of the opinion that further general price reviews should be undertaken.

eircom agreed with the Director's position.

Position of the Director

The Director proposes that current costing and modelling work shall be concluded as quickly as feasible. She intends to use the output of this work in assessing the proposals which she expects to receive from eircom in setting new interim rates from 1 April 2000. She maintains her position that any interim rates from 1 April 2000 shall be reviewed based on further costing studies carried out in the context of LRIC work. This further work would include comparison of outputs from bottom-up modelling against outputs from eircom's top-down modelling when the latter are available.

The Director is under a duty to protect confidential business information and this means it can be inappropriate to give full information about the costs of eircom. However, she appreciates the desire for as much transparency of information as possible, and she believes, subject to any further representations from eircom, that a level of detail for cost data equivalent to that available in the regulatory accounts should be available to the industry.

There is no decision required at this stage on this issue.

8.2 Return on Capital Employed

An important step in setting a cost-based interconnection charge is to estimate an appropriate cost of capital. This is to allow an operator to set cost based charges for its regulated services

[19] ODTR 00/13: Interconnection Rates in the Irish Telecommunications Sector – Status Report"

[20] ODTR 00/14: Interconnection Rates in the Irish Telecommunications Sector – Decision Notice D2/00 on rates to apply to 1 December 1999

[21] ODTR 00/15: Interconnection Rates in the Irish Telecommunications Sector – Decision Notice D3/00 on rates to apply from 1 December 1999 to 31 March 2000.

that allow it to make a Return On Capital Employed (ROCE) that covers its cost of capital. A recommendation from the EU Commission on interconnect services suggests the Weighted Average Cost of Capital (WACC) be used to calculate the appropriate return for the purpose of setting interconnection tariffs. [22]

After consulting on the issue, the Director concluded that the WACC should continue to be used to calculate *eircom*'s cost of capital for use in setting *eircom*'s interconnection rates. However she clarified a number of points as to the method and principles to be used in calculating *eircom*'s WACC.

1. The CAPM will be used as the model for estimating the cost of equity
2. In principle, *eircom* should calculate a separate beta for its interconnection business unit, but in the interim, a beta for *eircom* plc should be used.
3. In estimating the beta for *eircom* plc, additional privatised telecoms operators other than Telecom New Zealand should be considered.
4. The net capital employed should be calculated using the actual accounting figures in *eircom* network's balance sheet.

She also suggested that benchmarking with other operators should only be used to aid in identifying inconsistencies in inputs to the WACC. The final WACC figure of *eircom* should not be benchmarked.

Industry views on the above points were sought.

Views of Industry

There is a broad measure of support for the Director's position, although only one OLO explicitly stated that they agreed with the overall approach and methodology of the WACC calculation. No submission questioned the overall approach or proposed an alternative.

eircom agreed that WACC is the most appropriate method of calculating the return on interconnection tariffs although it raised specific concerns regarding the method used in the WACC calculation.

Disagreements between the submissions arose on two methodological issues:

1. in the interim, the beta for the company as a whole should be used as the beta for the fixed line business; and
2. the net capital employed should be calculated using the actual accounting figures in *eircom*'s balance sheet.

Beta Parameter

Of the OLOs responding to the question on the suitability of the *eircom* company beta rate for the network business, there was a split between those who felt that the *eircom* company beta was too high (thus leading to overstatement of interconnection costs) and those that felt it was a suitable proxy for the time being. A number of suggestions were made as to how the beta could be estimated. Betas of other businesses with similar risk profiles such as near monopoly suppliers of water or electricity were suggested. Alternatively the fixed line business of *eircom* or other incumbents was suggested as proxy. *eircom* agreed that the *eircom* company (or *eircom* plc) beta should be used in the medium term in the calculation of the WACC.

[22] *Commission Recommendation of 08.04.98 on interconnection in a liberalised telecommunications market: part 2 – accounting separating and cost accounting*. OJ No. L141, 13 May, 1998, p6 *et seq*.

One OLO felt that the *eircom* plc beta would not be a suitable proxy for the beta of *eircom*'s fixed line business, due to the effect of including *eircom*'s mobile operations in the whole company beta[23].

Net Capital Employed

Concerning the net capital employed, only three respondents addressed this issue. One explicitly agreed with the Director that net capital employed "should be calculated using the actual accounting figures in *eircom*'s balance sheet". One was explicit that the balance sheet referred to is *eircom*'s network CCA balance sheet. *eircom* proposed the using of "the fair economic value of assets" when determining capital employed.

In addition there are two specific issues which *eircom* believed should also be reflected in their capital employed: R&D and brands.

Other issues

Three respondents wanted ODTR to publish *eircom*'s ROCE, in the interests of transparency.

One wanted gearing in the WACC calculation to be based on market values rather than book values[24].

All OLOs that addressed the issue concurred that data from other companies should be used as benchmarks when estimating parameters for use in the WACC calculation. One OLO suggested that there was enough data to directly estimate *eircom*'s beta from stock market prices.

Position of the Director

The Director is of the opinion that adjustments made to the beta to account in particular for the mobile operations of *eircom* will not have a significant impact on the beta used to calculate *eircom*'s WACC. She therefore considers that at present the *eircom* plc beta should be used as a proxy for the beta of the fixed line business in the calculations of the WACC.

However, the Director considers that since *eircom*'s share price has relatively little history, both direct estimation of *eircom*'s beta and benchmarking based on a wide range of other telecommunications company betas are useful for assessing the appropriate beta for use in the WACC calculation.

She maintains her position that only the inputs to the calculation of the WACC, and not the WACC itself, should be benchmarked.

Concerning the figure to be used for net capital employed, use of "fair economic value" would raise considerable problems of theoretical consistency and practicality. The regulatory asset base is an important component of regulation. One problem with fair economic value is that it requires the valuation of sunk capital, in direct contradiction to the economic principle that sunk costs ought to be ignored. Establishing a "fair economic value" of sunk costs would be impractical. The Director considers therefore that "fair economic value" is not an appropriate basis for this calculation of WACC.

The Director believes that the net capital employed should be based on the balance sheet information of the publicly available separated accounts of *eircom*. At present these are only available on a historical cost accounting basis, but eircom is currently implementing current cost accounting and LRIC for its core network.

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[23] The ODTR has examined this issue but has not found statistically significant differences between the betas of fixed and mobile businesses in general and hence it appears reasonable for the time being to apply a zero adjustment to the beta of eircom plc to obtain a beta for the fixed line business.

[24] ODTR calculations suggest that at present there is no material difference between the two approaches in their effects on the estimated WACC.

eircom has presented no substantive work to quantify an increase in its capital employed for R&D and brands. The issue of brands is particularly prone to circularity. A brand value is the capitalised profit premium that is attributed to a branded product compared to an unbranded product. For a monopoly telecoms provider, with no unbranded comparators, the capitalisation of monopoly profits could be presented as "brand value".

Research and Development presents similar scope for manipulating capital employed. International accounting practice is largely to write-off expenditure on R&D rather than treat it as an asset. The Director notes that *eircom* currently in its published accounts, does not capitalise R&D, but expenses it immediately.

The Director accepts the desirability of eircom's ROCE being publicly available. She does not feel that it is appropriate to publish her view on *eircom*'s ROCE at this time. She would expect to make this known in the context of a future decision notice. The Director accepts the desirability of eircom's ROCE being publicly available and intends to publish this when finalising the rates for the period 1 December 1999 to 31 March 2000.

The use of market values rather than book values for calculation of gearing in the WACC calculation does not appear to have a significant impact on the estimated WACC. The Director is satisfied with the current methodology used for calculating *eircom*'s gearing.

Decision 8.2.1

The beta used to calculate the cost of capital to *eircom* network shall be that of *eircom* plc.

Decision 8.2.2

For the time being, it is appropriate to use direct econometric estimates of *eircom*'s beta together with evidence on the betas of a wide range of other publicly traded telecommunications companies to estimate the appropriate beta for use in the calculation of *eircom*'s WACC.

Decision 8.2.3

Inputs to the calculation of the WACC shall be benchmarked, not the WACC figure itself.

Decision 8.2.4

Net capital employed shall be derived from *eircom*'s network balance sheet in its accounting separation accounts.

Decision 8.2.5

The current methodology using book values to calculate gearing in the WACC is suitable and should continue to be used.

8.3 Customer Sited Interconnection

The rates set out in eircom's RIO for Customer Sited Interconnection are based on eircom's retail charges for leased lines pending a leased line cost review. eircom notes that leased line pricing must according to the Leased Lines Regulations[25] be cost based, and that the use of leased lines for interconnection rather than other commercial use does not impact basic cost of provision. However, economies of scale and marketing cost avoidance arguments are used to justify a wholesale discount of 8%.

The Director noted that her Office was engaged in a work stream to review the costs of provision of leased lines. The Director recognises that the same physical leased lines are used

[25] European Communities (Leased Lines) Regulations 1998 (SI 109of 1998)

for the provision of both private circuits and interconnection circuits and that any costing on leased lines would be applicable for the purpose of determining interconnection costs. She proposed to take relevant comments made as part of this consultation into account for the costing review.

The Director sought interested parties' opinions on current CSI prices and her review of these.

Views of Industry

Of the five OLOs that commented on the price of CSI, all were in favour of a review of the prices charged. Two were doubtful as to the appropriateness of tying of CSI into retail leased line prices. A couple suggested that they expected any review to bring the cost of CSI into line with leased line prices suggested by the European Commission (EC) in December 1999. A couple of OLOs also outlined why CSI should not be viewed as a leased line citing that there is only one local end with CSI (as opposed to two with a leased line) and the fact that sales and marketing as well as customer services are quite different for CSI compared to retail leased lines. One thought that until LRIC based costs could be applied to CSI, eircom historical cost data should be discounted to mimic the LRIC costs of an efficient operator.

eircom noted that it was reviewing the costs of its leased lines and that it would be able to justify to the ODTR its leased line costs relative to the interconnection charges it makes.

Position of Director

The Director notes that, following on from work on eircom's leased line prices, eircom has announced reductions to a range of leased line prices[26]. She welcomes those reductions and, insofar as the same elements are used to provide interconnection circuits, the reductions will apply directly to interconnection circuit costs from the same date as the reductions in leased line prices.

In addition to these general reductions, certain adjustments are required to the cost structure to ensure that true costs of leased lines for CSI purposes can be ascertained. Adjustments are required in the following areas:

1. sales and marketing costs;
2. overheads;
3. accounting procedures (plant life, adjustment of ROCE, removal of restructuring costs, removal of notional debtors);
4. the number of local ends involved in the provision of CSI.

The Director believes that such adjustments will remove all cost elements that are not related to the provision of leased lines for interconnection purposes.

The Director requires eircom to continue to co-operate with ODTR in the identification and quantification of these adjustments so that the reductions in CSI interconnection circuits that are scheduled to take place at the same time as the reductions in leased line charges (from the beginning of July 2000), also take account of these adjustments.

Decision 8.3.1

The current methodology using book values to calculate gearing in the WACC is suit

At the same time, the price of CSI circuits shall be adjusted to take into account the following factors listed:-

- **sales and marketing costs;**
- **overheads;**

[26] http://www.odtr.ie/docs/pres060400.doc

- **accounting procedures (plant life, adjustment of ROCE, removal of restructuring costs, removal of notional debtors);**
- **the number of local ends involved in the provision of CSI.**

Revised CSI charges are to be included in the RIO that is republished on 27th June 2000.

8.4 In-Span Interconnect

Charges for in-span interconnection (ISI) have, to date, not been considered by the Director to be adequately cost justified. This resulted largely from insufficient detail concerning the totality of costs involved in realising the offer in practice. Notwithstanding this, the Director sought the industry's views on the appropriateness of the current ISI offer including the level of the annual maintenance charge.

Views of Industry

Five OLOs provided opinions on eircom ISI pricing. All felt that the current costs have no transparency and that eircom should be required to justify charges based on its costs.

eircom stated that as with CSI, it is in the process of reviewing its costs for the provision of ISI. It reiterated previous statements that the maintenance charges will have to be estimated as ISI is a new product for eircom.

Position of the Director

The Director requires eircom to provide full justification of its costs for ISI in the same context as the work being carried out on CSI. The charges for ISI shall be appropriately consistent with any changes in underlying cost elements that apply for leased lines and CSI.

Decision 8.4.1

Eircom is required to provide full justification for ISI charges to ODTR by 22nd May 2000.

Revised ISI charges are to be included in the republished RIO on 27th June 2000.

8.5 Billing and Carrier Administration Charges

The act of interconnection itself may generate additional costs over and above the interconnect specific costs. These can arise from the cost of physical additions to the system necessary to enable the network to handle interconnection traffic. Such costs may arise from administrative activities involved in setting up, maintaining and billing for interconnection.

In compiling its RIO, eircom proposed the inclusion of additional costs for carrier services billing and administration to be applied variously to call origination, termination, transit and international rates.

The Director, after initial consultation, considered that additional costs for billing and carrier administration may be caused by the provision of interconnection services and that these costs should be recoverable to the extent that they have been both fully justified and identified as being incremental to interconnection and not incurred from the normal activities of the company (this applies as well to transit settlement and international billing costs). Any incremental costs where justified should be recovered through a per minute charge on all minutes of relevant (e.g. international costs recover from international interconnection traffic) traffic[27] over the network.

The Director sought views on her proposal to allow justified incremental costs to be recovered through a per minute charge on all minutes of relevant traffic once these could be identified and justified as material costs.

[27] OLO and eircom Retail

Views of the industry

All OLOs expressing opinions on this issue accepted explicitly or implicitly that there are additional costs associated with the act of interconnection.

They were split however, on whether these should be recoverable or not. Three of the OLOs responding specifically to this question agreed that the costs should be recoverable, but that they should be spread over all call minutes (OLO and eircom). Others stated that these were costs that all operators had to bear and that each should bear them as overheads without charging. One OLO was concerned that the costs might include product development and felt that OLOs should not be paying eircom for this. Other OLOs supported the Director's attempts to obtain full justification of eircom's costs in this area.

eircom outlined the cost categories it considers as being driven by the provision of interconnection services. These were, billing, relationship management, network dimensioning to handle volatile interconnection traffic and interconnection product development.

Position of the Director

The Director accepts that network competition does lead to some additional charges arising due to interconnection activities. However, she does not accept that eircom has justified its costs in this area to date.

Once she has received justification which allows her to determine the incremental costs of billing and carrier administration to eircom, she proposes to divide these by all eircom network call minutes (those going to OLOs and to eircom retail) and thus to determine a per minute charge. As eircom customers also benefit from competition in the Irish telecoms market, she feels it is appropriate that all customers should bear a proportion of the additional costs arising as a result of this competition.

Until she receives justification of incremental billing and carrier administration costs from eircom (the number of employees in eircom carrier services since liberalisation does not in her opinion, constitute a sufficient justification of costs), she proposes that no charge be made to OLOs for interconnection billing and carrier administration charges.

Decision 8.5.1

Additional costs caused by the provision of interconnection services may be recovered but only to the extent that they have been both fully justified and identified as being incremental to interconnection and not incurred from the internal activities of the organisation. This approach also applies to transit settlement and international billing costs. The Director does not consider eircom to have justified its costs in these areas yet.

Any incremental costs, where justified, should be recovered through a per minute charge on all minutes of relevant traffic[28] over the network.

8.6 National Transit

Transit rates apply to calls handed over to the eircom network from an originating OLO's network for termination in networks other than the eircom network.

Transit traffic can currently be passed to the eircom network at any tandem exchange, but eircom does not at that point necessarily know to what network the call is destined. eircom states that to perform the necessary analysis at the originating tandem switch would, without additional equipment, compromise the security of switch operations.

eircom's original transit offer – which a justification for the level of difference has not been made to the satisfaction of the Director – consisted of two rates: transit to mobile and transit

[28] OLO and eircom Retail

to fixed. It justified this difference based on the average number of network elements used in transiting each type of call. However, some transit calls need switching once only, while others pass through more exchanges in part due to eircom's inability to identify the terminating network at the originating tandem switch because of limited digit analysis.

After an initial consultation in which the Director asked for opinions as to the most satisfactory technical solution to this problem based on costs and routing efficiency, she concluded that she had insufficient information to make a clear decision. She awaited the results of the LRIC work that her office is currently involved in and considered that this should enable her to make an informed decision.

She proposed that, for the time being, a single rate for transit calls should remain in place, but that multiple transit rates based on network elements used should be introduced when this is technically feasible. Opinions on this proposal were sought as was an indication from eircom as to the improvements required to its interconnect billing system to allow it to bill multiple transit rates.

Views of the industry

There was general agreement from OLOs on the Director's position to maintain a single transit rate for the time being. Most OLOs accepted explicitly or implicitly (i.e. through outputs of LRIC work) the idea of multiple transit rates based on the network elements they use. One OLO raised the point that the costs of any change in current arrangements should not outweigh the benefits.

One OLO raised a concern about the general level of transit rates in Ireland when compared to transit rates in the UK. Although the UK and Sweden have been in the vanguard of low interconnection rates within the EU, Ireland has been amongst the immediate followers.

eircom reiterated its belief that there is a systematic difference in the treatment of transit calls destined to fixed line networks compared to transit calls destined for mobile networks and that this difference justifies a different charge for these two types of call.

However, eircom expressed its view that as OLOs in a liberalised market can interconnect directly with one another or via another transit network and that this was a competitive market and should not be regulated at all.

eircom proposed that either an average geographic number transit charge be calculated and applied or an operator specific transit charge could be calculated as a function of its network development.

eircom felt that the effect of requiring a single transit rate to non-geographic numbers could be significant.

Finally, eircom stated that its network may be used as an overflow network during the busy hour. As this occurs during the busy hour, the marginal costs of service provision are very high. eircom therefore proposed that a premium be charged to carry overflow transit traffic during this time.

Position of the Director

The Director has accepted for some time that there is a difference in the way that transit calls destined for fixed line networks are routed on eircom's network compared to transit calls destined for mobile networks. However, she is concerned that eircom, under the current interconnect regime, is not given sufficient incentive to route in the most efficient manner. She intends therefore, only to allow eircom to recover the costs of an efficient operator for transit calls. The principles of cost recovery by eircom for transit calls shall be the same as those set-out in section 9.1 on routing.

In the meantime, she does not consider that eircom has provided her with any new information that allows her to reconsider the application of different transit rates for transit calls to fixed and mobile networks.

The Director notes the point that specific calls, such as those to non-geographic numbers, may have different costs. Close examination of such costs is being reviewed in the context of the work on LRIC.

The Director does not accept that the market for transit calls is competitive as no OLOs have a national network with interconnection to all other network operators as eircom does.

The Director does not accept the proposal by eircom that an additional surcharge be paid for traffic using the eircom network as an overflow network as eircom has failed to justify this. However, she notes that this is a valid concern of eircom and will consider further information from eircom on this matter and invites submission of further information including a justification of the costs of additional transit traffic during the peak hour.

Decision 8.6.1

eircom shall continue to apply a single transit charge for all transit traffic.

Decision 8.6.2

The Director does not consider that the market for transit services is competitive and will continue to regulate it until otherwise determined by her.

8.7 Projected Minutes

Traffic volumes (real or estimated) are needed to calculate cost based interconnection charges. Projected 1999 traffic volumes were used in calculating the interim interconnection rates to take account of the increasing network efficiency of eircom with the volume of traffic growing faster than associated costs. These projected volumes were calculated using information provided by eircom on traffic routing factors, anticipated traffic volume increases in 1999, and existing traffic volumes.

The Director recognised that the construction of an econometric model may be a more robust approach to forecasting the projected minutes to be used in calculating interim interconnection minutes. However having consulted on this issue and considered the response received, international best practice and such other information as is available to her**,** the Director considered that, whilst not necessarily the most accurate, the current method of predicting minutes was practical and proportionate in level of cost and effort to the desired outcome. She therefore recommended that the existing method continue to be used.

Views from the industry were requested.

Views of Industry

Five OLOs responded to this question. Three agreed with the Director that the current forecasting method is simple and pragmatic. However, one pointed out that the forecast should only be used to set interim rates. It also thought that the ODTR should do a parallel forecast.

Two OLOs disagreed that the current forecast methodology should continue to be used. They felt that it would underestimate total traffic volumes. One suggested that the ODTR should examine growth of other telecoms markets and reformulate a method for calculating projected minutes.

eircom welcomed the Directors intention to continue with the current forecasting method.

Position of the Director

The Director still believes that the current method is a pragmatic approach to calculation of the projected future call minutes. She recognises that as with any forecast method, it will not produce completely accurate forecast figures. However, whilst she is anxious that interim interconnection rates come as close as possible to final rates, she reminds the industry that the process of retrospection (set out in section 7.2) provides a safety net should interconnection costs be materially different from the interim ones as a result of any of the parameters and assumptions used in setting them (of which forecast call minutes is one) being incorrect.

She notes the suggestion to benchmark the growth in traffic in Ireland with other markets and that the ODTR develop forecasting methods. The Director considers that the players in the market are in the best position to develop forecasts of traffic growth. In addition, she is concerned that whilst benchmarking is useful for making comparisons they should not be used for trying to derive exact numbers as is required in this context.

The Director proposes that until further notice, the current methodology should continue to be used to calculate projected call minutes.

Decision 8.7.1

The current forecasting methodology for projecting minutes shall continue to be used. This shall underlie the calculation of interim rates. When setting final rates, the actual recorded call minutes shall be used in so far as is practicable.

8.8 Time of day dependent charging

The PSTN network is normally dimensioned according to the traffic generated by demand in the busiest hour of the day[29]. The network capacity used for peak and off-peak[30] calls is a joint cost between these services i.e. capacity used to meet peak demand also provides the ability to meet demand in the off-peak times. Therefore appropriate economic attribution of the costs between the charging periods, particularly at extreme off-peak times when the network is used very lightly involves significant economic issues especially on causation.

The current interconnection rates reflect retail tariffs varying according to the time-of-day and the day-of-week when a call is made. The current split of interconnection rates between peak, off-peak and weekend (where appropriate) is based on eircom's overall retail tariff gradient.

The consultation paper sought the views of interested parties as to whether the charges for the use of *eircom*'s network should vary in accordance with a retail tariff gradient or should be averaged over a 24-hour period. It also asked respondents if they agreed that where possible the gradient should be measured as the period over which the interconnect charges should apply and, if not possible, whether they agreed any period of sampling should be statistically significant.

Views of Industry

Of the five OLOs that expressed an opinion on the use of gradients to set interconnection rates, all agreed that a gradient should be used and that a retail tariff based gradient was the most pragmatic and suitable one to use.

Three OLOs expressed a concern about potential margin squeezing if the interconnection gradient was not the same as or greater than the retail gradient.

One OLO suggested that LRIC work should provide more accurate data on the true gradient that should be applied.

eircom agreed with the principle that a retail tariff gradient should be used to derive interconnection charges. The use of a flat 24 hour gradient might, it suggested, lead to interconnection charges rising above retail tariffs for off-peak calls. It proposed that a forward looking retail gradient for 2001 be used for interim rates valid from the period April 2000 onwards. *eircom* feels that a backward looking gradient would rapidly become inconsistent with changing traffic patterns and retail tariffs. This in turn could lead to difficulties in preventing the emergence of a price squeeze between retail and interconnect tariffs at particular times of day.

[29] The 'busiest hour' ignores exceptional surges in demand
[30] Including Weekend where appropriate.

eircom revealed that calling patterns are changing reflecting 24 hour telephone services (call centres, home banking, etc.) and dial-up Internet usage increasing particularly in the evenings and at weekends. To ensure that the peak usage rate of the eircom network remains consistent across each time period (peak/off peak), retail price changes may be required with off-peak charges rising relative to changes in peak charges.

eircom acknowledges that calculating future looking rates raises difficulties. Future retail prices and volume mixes must be known. Retail prices are set not only to meet network capacity considerations, but are also affected by consumer demand, competition from OLOs and regulatory constraints. It can be difficult to forecast given all of these unknown variables. It proposes that gradient trends could be used to help calculate forward looking gradients.

eircom also refer to the large difference that exists between the steepness of the retail tariff gradient in Ireland with that of the average EU retail gradient. The EU benchmark gradient is much flatter so the ratio of peak to off-peak prices is much smaller. eircom suggest that they would like to bring Irish gradients into line with typical EU gradients over the coming years.

Concerning sampling periods, eircom believes that the largest possible sample should be used for determining gradients, but that in practice, data for one month is statistically significant and should be used.

Position of the Director

The Director considers that use of a retail tariff gradient is a reasonable approach given the difficulties of measuring the true cost causation of interconnection charges. The industry agreed that despite shortcomings, the use of a retail tariff gradient was a pragmatic solution to determining a gradient for interconnection charges.

In accepting that retail tariff gradients are appropriate, a question arises as to whether this should be a backward looking or historical retail gradient as is currently used, a real-time gradient which is adjusted as retail prices change, or, a forward looking gradient based on expected future retail tariffs as eircom is suggesting.

Were a backward looking gradient to be adopted, given the changing calling pattern referred to by eircom, the gradient would, over time, become increasingly inconsistent with prevailing retail tariffs. However, this method has the advantage that it is easy to determine accurately and it gives all parties certainty about interconnect charges for the relevant period.

If a real-time retail gradient were used, this would involve the recalculation of the gradient each time retail prices were changed. There are, however, a number of difficulties with the operation of a real-time gradient. eircom tends to make changes to its retail prices several times a year. It may be onerous to require changes to the retail (and interconnection) gradient every time a retail price change occurs. It might be sufficient to change the gradient at regular intervals (say, once every six months for example) taking into account the retail price changes of the preceding period. Another potential issue is that frequent updating might entail an undesirable loss of certainty for OLOs.

A forward looking gradient would deliver the certainty associated with the backward looking method, but would not necessarily reflect either current or future traffic patterns on eircom's network. The major disadvantage of forward looking gradients is that these are based purely on forecasts of retail pricing behaviour. Trends in network traffic patterns should help to produce accurate network usage forecasts, but retail prices are driven by factors other than the requirement to distribute traffic as evenly as possible across the network at different times of day.

The Director recognises the attraction of using a real-time gradient as this, although set by eircom, reflects (to some extent at least) the retail prices required to ensure an efficient usage of the eircom network. It therefore responds most closely to the developing traffic call patterns and will contribute to appropriately allocating costs of providing services across different times of day. This is the reason why tariff gradients exist in the first place. However she recognises that there are many questions to be answered regarding the practical implementation of a gradient which responds to real time retail price changes.

She considers that for the time being a backward-looking gradient should continue to be used. However, she would like to invite the industry to provide her with further views on the merits or disadvantages of real-time tariff gradients along with ideas of how they might be calculated in practice (please refer to section 2). She proposes to address this issue again if there is support for a real-time gradient.

Decision 8.8.1

A tariff gradient shall be used when calculating the costs of interconnection calls. The tariff gradient to be used shall be a retail tariff gradient.

Decision 8.8.2

The retail gradient shall relate to the retail tariffs in force at the start of the relevant period.

8.9 National Termination

National call termination rates apply to calls passed from an OLO network to the eircom network for termination on that network.

The conveyance charges that apply to the Primary and Tandem charging levels are currently averaged across the country. However, an element of distance de-averaging has been used for Double Tandem calls, so that the interconnection charges are more closely related to the actual usage of the eircom network.

The Director sought to confirm whether interested parties agreed with the position she reached after initial consultation, that the current national termination charging structure should be maintained as the additional complexity of de-averaging it would outweigh any benefits.

Views of Industry

OLOs were in agreement with the Director's position that the current national call termination charging structure should be maintained, believing the costs of further de-averaging to outweigh the benefits to be gained. A couple noted that distance is still an important, but diminishing, cost driver. Whilst agreeing to maintain the current cost structure, a couple of OLOs expressed their belief that in general, OLOs should only have to pay for the eircom network elements that they use.

eircom agreed with the Director's position to maintain the current charging structure. However it raised the issue that the underlying costs of interconnection are different for call termination compared to call origination. This is due a slightly higher ratio of successful to unsuccessful calls for terminating compared to originating calls, different hardware elements and software capabilities, the use of different network segments and a higher ratio of chargeable conversation time to total network holding time for terminating compared to originating calls.

Views of the Director

The Director considers that OLOs should pay for the network elements of eircom's network that they use for interconnection services. She understands from the industry however, that the additional complexity of further de-averaging network termination charges would outweigh the benefits to be gained. She therefore maintains her position and proposes that it is appropriate to continue to use the current network termination charging structure.

She recognises that the cost of terminating calls may be slightly different from the costs of originating calls. She has dealt with this issue in section 5.2.

Decision 8.9.1

The current charging structure for national termination as set out in the RIO shall continue to be used.

8.10 Operator Assisted Services

In ODTR 98/60 the Director agreed interim rates with *eircom* for operator assisted services, on a fixed charge per call basis, in the following areas:

- National Directory Enquiries
- International Directory Enquiries
- National Operator Assistance and
- International Operator Assistance

For these services, *eircom* carries calls handed over from the network of an OLO to an *eircom* operator centre. Both enquiry services are the same as that offered to customers directly connected to the *eircom* network.

The rates agreed were of an interim nature as not all the relevant information had been provided by *eircom* to enable the ODTR to assess compliance with the relevant interconnection legislation.

In an initial consultation on how charges for such services should be calculated, and what method of costing should be used, completely opposing views between OLOs and *eircom* emerged. The Director proposed that she would consider this issue in light of the LRIC study and sought the views of interested parties as to whether this was an acceptable approach.

Views of Industry

All OLOs responding to this question thought that it would be appropriate to reconsider this issue as part of the LRIC study.

eircom also thought that any review of these charges should be in the context of the LRIC study. However, it argued that the market for operator assisted services was competitive and that it should not be regulated.

Position of the Director

The Director has considered the suitability of applying LRIC based costing to operator assisted services, having regard to the increasing experience and information that has become available from the work on LRIC. LRIC based costing methods are suited to services reliant mainly on fixed network assets with a long useful life. They provide an incentive to an operator to invest in assets and develop an efficient network infrastructure. But the bottom-up methodology used generally in telecommunications is less suited to a service whose costs are essentially operational when the services are provided by human operators rather than being comprehensively automated. Application of LRIC, which considers forward-looking costs of an efficient operator, could underestimate the costs of providing operator assisted and directory enquiry services which largely involve operational services provided by human intervention rather than automation. The use of appropriate current costs is a more accurate reflection of the costs efficiently incurred in the provision of such services. However, the Director is not convinced that directory enquiry or operator assisted services are currently operated efficiently by *eircom*..

In light of the above, the Director proposes that operator assisted and directory enquiry services be costed using efficiently incurred current cost accounting methodology in order to reflect the current costs of *eircom* in providing these services.

Concerning the issue of competition in operator assisted services, the Director noted in ODTR 99/78 discussing the Telecommunications Tariff Regulation (Modification) Order, 1999, that operator assisted services and directory enquiry services are not yet effectively competitive.

Given that neither operator assistance nor directory enquiry services have yet become effectively competitive, the Director considers that these services should continue to be subject to interconnect price regulation.

Decision 8.10.1

The Director requires *eircom* to submit justification of the costs of its operator assisted services (including directory enquiry services – service schedules 108 to 111 in the RIO of 9/3/99) using the CCA methodology. Her office shall review these and final prices will be republished by eircom in the RIO..

8.11 Data Build and Modification

In document ODTR 98/60, the Director accepted eircom's interim rates for the costs that might be incurred when initially setting up data build in the switches and for future modifications to that data. The rates were agreed pending consultation on whether, and, if so, to what extent, there should be a charge to recover the costs of data build.

Views of the industry

Of the 6 OLOs responding specifically to this question, 4 considered that data build and modification charges should be recovered through a pence per minute charge applied to all call minutes. The other two OLOs remarked that they do not charge other operators for data build and modification activities which they undertake (sometimes at the requirement of other operators). One of them felt that eircom had not sufficiently justified its data build costs.

One of the OLOs noted that not all data build items should be charged for. For example, the opening of number ranges is something all operators have to do and bear their own costs for this. Some charges such as data build for carrier selection codes could probably justifiably be charged for. However, in the interests of lowering barriers to entry, it suggested that it would be favourable if these costs were recovered through pence per minute charges.

Position of the Director

The Director draws attention to the fact that between Decision Notice D12/99 and the issuing of the ODTR 00/16, a dispute on this matter between OCEAN and eircom has arisen and been resolved.

The dispute centred around whether eircom was justified in charging OCEAN for specific databuild which OCEAN had requested from eircom. The request from OCEAN was for databuild which would reduce routing on the OCEAN network. It was judged that this was over and above the requirements for normal network operations and it was decided that the circumstances were such that eircom was justified in making a specific charge for the databuild requested. This decision suggests that there are circumstances where an operator specific charge for databuild and modification is justified. The Director requires eircom to submit a list of occasions when it proposes to make a separate charge for databuild and modification services along with a justification why a separate charge is reasonable in each of the occasions listed. Her office will review this and consider if it is appropriate for inclusion in the RIO.

In general, however, the Director has not received sufficient justification for the maintenance of separate charges for data build and modification and therefore maintains her position that appropriately justified data build and modification costs may be recovered through a pence per minute charge on all network minutes pending current cost review work.

Decision 8.11.1

The Director requires eircom to maintain the current arrangements for databuild and modification set out in the RIO.

Decision 8.11.2

As part of the current costing work of her office, the Director will consider the appropriateness of allowing relevant data build and modification costs to be recovered through a per minute charge over all traffic minutes - eircom and OLO.

Decision 8.11.3

The Director requires eircom to submit a list of cases where it proposes it would be just to make a separate operator specific databuild charge by 22nd May 2000.. She will review this and if appropriate, will require its publication in the RIO.

8.12 Packet Switching Services

eircom currently conveys packet service access calls handed over from an OLO's network for delivery to operators connected to the eircom network. These are currently delivered to the eircom network at the tertiary node. The charge for this service is composed of a weighted average of the tandem and long double tandem national termination rates.

The current service provides *access* only to the packet switch network and the charge relates to the use of the PSTN for this purpose.

The Director sought views of industry as to her proposal after initial consultation, that access to the packet network of eircom should be available at the tandem switch level, unless eircom could justify why this was not possible. She proposed that charges for this service, rather than consisting of a weighted average of the tandem and long-double tandem national termination rates, should be based on actual network elements used in accordance with the existing national call termination rates of eircom.

Views of Industry

Three OLOs responded specifically to this issue. All agreed with the Director's position that packet switched services should be available from eircom's tandem switches. Two of these OLOs commented on the pricing proposed by the Director. They were of the opinion that the costs of packet switched networks were quite different to those of circuit switched networks and proposed that further costing work be carried out in this area. One suggested that experience from other countries be considered.

eircom accepted the Director's proposal that access to packet switching services should be provided via tandem switches. As charging based on individual call termination would require significant investment in its billing system, and the number of calls to the service is very low, eircom proposed that a single tandem interconnect charge should be applied.

Position of the Director

The Director notes that the views of the industry support the proposal and is pleased that eircom accepts that OLOs should be able to access packet switching services of eircom at tandem level switches. She also welcomes agreement that eircom should charge a fixed per minute single tandem termination fee (equal to 1.160ppm at current rates) for this service instead of a rate based on the weighted average of all access calls to eircom packet services which currently gives 1.5ppm charge.

The Director's decision is therefore to confirm the proposed position. She will further review the costs of this service in the context of on-going LRIC work.

Decision 8.12.1

eircom shall provide access to Packet Switching Services at the Tandem (Secondary) switch level of its network.

Decision 8.12.2

The current charging structure for access to packet switching services shall be modified to single tandem call termination rates instead of a weighted average of all access calls to eircom packet services.

8.13 Access to Paging Services

eircom currently transit paging service access calls received from OLOs to the networks of paging operators (including its own paging subsidiaries). Access to the paging network is treated by eircom as the same as access to any other third party network, with a call termination fee, where appropriate, paid to the network terminating the call and a charge to transit the call across the eircom network.

The Director was of the opinion, after initial consultation on the subject, that the current arrangement, charging a transit fee and a termination fee, is suitable. The consultation paper sought the views of interested parties on the appropriateness of this charging structure for access to paging services.

Views of Industry

Four OLOs responded specifically to this question. The general thrust of their responses was that the Director's position was satisfactory. Two of them specifically noted that the Director should satisfy herself that the charges were cost based and that the relationship between eircom network and eircom paging network is arms length.

eircom agreed fully with the Director's position.

Position of the Director

The Director proposes that the current charging structure for calls to paging services should be maintained whereby OLOs are charged a transit rate (readers are referred to section 8.6) plus the termination charge of the paging network (if applicable).

Decision 8.13.1

The current charging structure of calls to paging networks should be maintained but should be updated to reflect any changes to eircom transit rates.

8.14 Emergency Services

eircom currently makes no charge for the provision of emergency services.

Prior to liberalisation the Director did not consider that eircom had provided sufficient justification why a charge should be made for these calls which are provided free of charge at the retail level. This remained the Director's position. She considered that no charge should be made for emergency services pending the outcome of the consideration of wider policy issues relating to the Universal Service Obligation.

Views of industry were sought on the Director's position.

View of Industry

All of the four OLOs replying specifically to this question thought an interconnection charge should not be made for calls to emergency services.

One pointed out that costs in emergency call centres has already been sunk. It assumed that any incremental costs should be negligible and would be recovered through general call revenues.

eircom remarked that provision of calls to emergency services should only be part of its USO to its own customers.

It offered to supply the Director with further information to justify the costs of provision of these services. It remarked that most EU incumbents recover charges for calls to the emergency services.

Position of the Director

The European Commission[31] states that a universal service charge may be set-up to allow the net cost of universal service provision to be shared among organisations providing public voice telephony. The Interconnection Directive (97/33/EC) requires charges for interconnection to be separate from the charges relating to universal service contribution. Annex III of Directive 97/33/EC on Interconnection and ONP defines the elements of universal service thus, *"This category may include service elements such as access to emergency telephones services…"*. Based on this legislation, the Director will consider any charges for the operation of calls to emergency services provided by eircom in the context of the USO.

However, the Director notes that the provision of emergency services can be split into two elements, the costs of conveying the call to the emergency call centre and the cost of operating the call centre.

Concerning the cost of conveyance, after fresh consideration, the Director considers that there may be a case for treating the cost of conveying the call from the PoI of an OLO to the emergency call centre in the same way as an ordinary call terminating on eircom's network. She considers that eircom should provide and justify a proposed rate for this call termination rate which she will consider in the context of the overall USO. She will further reconsider at that time whether any such rate should be included in the RIO as an interconnection charge.

Concerning the costs of operating the emergency call centre, no further information has been submitted by eircom which changes the view of the Director. She considers that eircom should not presently be able to charge for the call centre element of calls to emergency services. However, she welcomes eircom's offer to supply further information. As mentioned above, she will consider recovery of emergency call centre costs in the context of a USO fund.

The Director wishes to clarify that the designation of eircom as the USO operator in Ireland therefore imposes USO obligations on it in respect of all current or potential users of telecommunication services in Ireland, not just on its own existing customers.

Decision 8.14.1

eircom shall provide and justify a proposed rate for the conveyance of calls from OLO PoIs to its emergency call centres for consideration by the Director in the context of the USO.

Decision 8.14.2

Costs of provision of emergency call centre services will be examined in the context of a USO fund.

[31] Commission Recommendation on Interconnection in a liberalised telecommunications market Part 1 - Interconnection Pricing (C(97) 3148)

8.15 International Access Traffic

The international access traffic service covers the conveyance of international traffic handed over from an OLO's network for delivery through the eircom international network. This service is only available from eircom's tertiary switches as eircom is not able to provide international access from its tandem switches due to constraints in its billing system.

The current charging structure in the RIO is based on a combination of country specific charges and chargebands[32].

After an initial consultation on this issue, the Director concluded that:

1. The current structure for international charges of using a combination of chargebands and country-specific rates was appropriate.
2. The international market for interconnection was not yet sufficiently competitive to justify a reduction in regulatory oversight.
3. eircom should, subject to market demand, develop plans and costings for the implementation of changes to its billing system to enable access to international services to be provided at the tandem level in its network, provided these are cost-effective.
4. The per minute cost of international access should be based on the actual costs of the international network elements used, i.e. international access charges should be based on the actual costs of carrying the traffic to its final destination.

Respondents were asked for their opinions on these positions.

Views of Industry

1. Combination of chargebands and country-specific rates: Four OLOs responded on this point. Three were of the opinion that the current combination of country specific charges and chargebands was appropriate. Only one thought that there should be separate rates for each country. eircom did not comment on this specific point in this consultation.
2. Level of competition in the international interconnection market: Three OLOs commented on this point. Two thought the market should not yet be considered competitive. One considered it was competitive. eircom was strongly of the opinion that this market is competitive. It pointed out the difference between the retail level international call market and the interconnect level international call market. eircom stated that it has a minor role in the wholesale (interconnect) international traffic market. It did not specify what share of this market it currently has.
3. Access to international services at the tandem level of eircom's network: Three OLOs commented on this point. All were of the opinion that eircom should offer international services from its tandem level switches. eircom explained that international services are not offered from its tandem level switches due to constraints on its billing and data recording systems where there is a limit on the number of fee codes that can be applied. Any changes would require at least 6 months to implement. eircom suggested that related charges should be recovered through charges to interconnecting operators. eircom believes that such costs will outweigh any expected benefits.
4. International access charges should be based on the gross costs of terminating international calls: Three OLOs replied to this point. They all felt that actual costs of international network elements used should be the basis for setting the international access charges and that the gross cost of international call termination to the foreign operator should be used, not the net cost. One OLO thought that eircom might engage in 'payment in kind' with some ex-PTTs for international call termination services, i.e. that eircom would terminate incoming traffic in Ireland in exchange for reciprocal services. Any charges need to

[32] Which represent the weighted average cost of international access to a group of countries e.g. Band 8 Middle East and South Africa includes Bahrain, Lebanon, Oman, etc

include the costs of such payment in kind if this occurs. The two other OLOs thought the split between the network elements used and the outpayments to the terminating network should be made transparent.

5. Other points: One OLO considered that working capital should be taken into consideration when calculating international access rates. The nature of international settlement procedures means that eircom may receive payment from OLOs for international access services long before eircom itself has to settle its international accounts. It therefore ends up with positive working capital on which it can earn a rate of return.

Position of the Director

The current charging structure is suitable and should be maintained. The most frequently called countries have their own international call rates and other countries are split into chargebands with the overall charge calculated from the weighted average cost of international access to the group of countries in the relevant chargeband. eircom should be free to determine which countries have separate charges and which form part of chargebands.

The Director notes that there are a number of international carriers offering international conveyance services into and out of Ireland. She notes that it is likely that certain international routes will soon become competitive whilst others may remain uncompetitive for a longer period. She does not presently have detailed information to determine the level of competition on individual routes (Ireland to UK for example). The Director may, if she is satisfied that markets encompassing some routes are effectively competitive, withdraw regulation from such markets. Until this occurs she proposes to continue to regulate the whole international access market. She will welcome further information from eircom to support its claim that international access is competitive. She expects eircom to provide such information on a route by route basis.

The Director requires eircom to provide evidence of the specific costs of increasing the capacity of its tandem switches to allow for international conveyance services to be made available from these. Her office is carrying out work on LRIC costing of eircom's network operations. She will be including international access services in this LRIC work. Efficient network routing will be assumed in this exercise.

The Director is aware that eircom may terminate international calls from other operators (typically ex-PTTs) at no charge in return for reciprocal termination of international traffic originated on its network. She requires eircom to factor the costs of terminating this traffic into the total costs of international access. These gross charges should be used when assessing the actual costs of carrying traffic to its final destination. In determining gross charges, the international accounting rates payable should be taken into consideration and should be presented separately in costing data to the ODTR. This will ensure that eircom does not underestimate the costs of provision of international call access thus pricing below true costs and discouraging competition.

Finally the Director notes that eircom could potentially have a positive working capital fund on international access activities. However, she is not convinced that if this is the case, this is material. Most outpayments will be made to the US and the UK where outpayments are low. Ireland is unlikely to have a large positive balance of outflowing traffic to these countries. C

Decision 8.15.1

The Director considers that the current structure for international charges, using a combination of chargebands and country specific rates, to be appropriate.

Decision 8.15.2

The Director has not received sufficient evidence to persuade her that the international interconnect market or markets are sufficiently competitive to justify a reduction of interconnection regulation. Pending evidence from eircom on a route by route basis that the international access market is competitive, she will continue to regulate interconnection rates on individual international routes offered by eircom.

Decision 8.15.3

Efficient routing principles shall be applied in calculating the routing of international access calls. eircom shall only be able to recover the costs of an efficient operator.

Decision 8.15.4

International access charges shall be based on the actual costs of carrying the traffic to its final destination. These shall be calculated using network costs incurred using efficient routing principles and gross international outpayments to foreign operators.

8.16 Access to the Directory Database

The current 'Access to Directory Database' service offers on-line access to the directory database by the use of an agreed number of terminals for a fixed fee. Connection is made via a leased line from the OLO's premises to *eircom*'s premises.

The Director considered the current charging structure (fixed fee basis) to be appropriate, subject to the costs and details of the link between OLOs premises and the Directory Database being included as part of the RIO service offering.

Views of interested parties were sought about the current charging structure, the level of access and the structure of the service available.

Views of Industry

Four OLOs commented specifically on this point. Two noted that all interconnect prices should be cost oriented, transparent and non-discriminatory. One of these noted that a similar service from BT using a similar charging structure is cheaper than the *eircom* offer.

Two OLOs felt that the current offer is not appropriate. One noted that it was introduced as an interim charge in 1998 and that it should now be reviewed. The other thought that the current service should be expanded to offer a download of the Directory database in addition to the current on-line access. This would allow for greater manipulation of the database than is possible through the on-line service currently offered. It pointed out that *eircom* DQ services hosts a download of the directory database.

eircom has a USO obligation to host a national telecoms database which includes details of all telephone subscribers in Ireland. It is currently experiencing difficulties in getting the information required to populate this database from OLOs. It stated its belief that the directory services market is fully competitive except for access to customer data from OLOs which it considers to be a bottleneck.

Position of the Director

The Director requires *eircom* to justify the costs of its directory database access service. This should be done within 5 weeks of the publication of this decision notice.

To ensure greater transparency, the offer should be presented in the RIO showing the conveyance costs of calls to the database separately from costs of provision of database services. The Director considers that for access to the directory database, eircom retail should pay the same conveyance and data provision charges for this service as OLOs. In ensuring a level playing field for all operators in the provision of DQ services, the Director is concerned about the lack of distinction between eircom retail and eircom's own DQ arm. The examination of this issue will form part of a separate workstream.

eircom must only make available to its own DQ arm the same DQ information as is made available to other DQ operators, i.e. it must not discriminate.

Decision 8.16.1

eircom must justify the costs of its Directory Database Access Service. In doing so, it should differentiate between the costs of conveying a call to the database and the cost of providing the data.

Decision 8.16.2

eircom retail must pay the same charges for access to and data from the directory database as an OLO.

Decision 8.16.3

eircom must not provide its own DQ service with access to any information which is not available to other DQ service providers.

9. Routing

This section considers issues relating to the routing of traffic on eircom's network.

9.1 Routing Principles

Routing principles are fundamental to the calculation of interconnection charges as they determine how calls should be routed and thus which costs should be recoverable by eircom.

Routing factors set out by interconnection service which, and to what extent, network elements are used in the provision of that service. Based on these, the interconnection charges are derived from the costs assessed for each of these network elements.

Routing factors depend on the profile of calls generated by an interconnecting party in terms of both time of day and location. Thus for existing operators they could be measured retrospectively. The current interim interconnection rates were calculated using theoretical routing factors based on eircom's network traffic matrix and routing matrix. These routing factors generally reflect the usage of network components by fixed telephony traffic.

Following widespread consultation of the industry on this issue, the Director was not presented with satisfactory evidence that the factors used were inappropriate and should not continue as the basis of the calculation. She therefore was of the view that:

1. Theoretical routing factors based on general network average usage should be used for calculating interconnection charges and these would be based on regular sampling of network element usage by traffic category.
2. eircom's network traffic and routing matrices were appropriate for the calculation of average theoretical routing factors, but this issue was likely to need to be addressed again in the Industry Advisory Group working on developing a bottom up LRIC model.
3. Different routing factors for different traffic cases should only be used when there was a systematically material difference in the usage of network components by a particular type of traffic

Furthermore, statistical confidence was seen to be a key requirement when selecting an appropriate sampling period, and the extent to which the period was representative of the year was also seen as important.

Having consulted on this issue and considered the response received, international best practice and such other information as is available to her**,** the Director considered that the period of sampling used when measuring the usage of network components should be sufficient to ensure it is: unbiased\objective, statistically significant, representative of the entire population, not skewed by seasonal or other factors and determined in a statistical manner. In addition, the traffic sampling should include all the call types that use the network.

The Director sought views on the positions she had adopted.

View of Industry

Four OLOs agreed in general with the position of the Director. However, they expressed a desire to have greater transparency of the routing factors used. One suggested an independent audit should be carried out on these factors. It also raised the point that the identification of routing factors should be consistent with the recording of interconnect calls for billing purposes.

A couple made reference to the ongoing LRIC work and supported the Director's view that theoretical routing factors may change in the context of this work.

Two OLOs in particular expressed disagreement with the Director's view. One felt that the topology of eircom's network was different to that of new OLO operators and should not be used as a reference for all networks. It suggested that a theoretical network be created from all networks in Ireland with each being weighted according to investment in the network, its age, the traffic profiles it carries and the services offered over it.

Another felt that OLOs were being penalised for the inefficiency of eircom's network in its routing capabilities. It urged that a review of the options for more efficient call origination, call termination and transit routing be carried out at an industry level.

eircom concurred with the positions of the Director.

Position of the Director

The Director is concerned that eircom should have incentives to route calls across its network in the most efficient manner possible and she recognises that the current interconnect regime provides no such incentive for eircom as it is based on the principle of cost recovery. Any costs incurred can be recovered, plus a return on capital. It is the Director's intention to remove this disincentive for efficient routing. Inefficient routing will not be rewarded in the future. She proposes to limit cost recovery to that of an efficient operator. She intends that one strand of the LRIC work undertaken by her office will allow her to determine routing costs for an efficient operator. eircom would then only be allowed to recover these costs, irrespective of how it chooses to route traffic and of costs it incurs as a consequence of those choices.

Once efficient routing has been established and the associated routing factors have been calculated it is her intention to use these to establish a transparent regime to govern routing factors and how these are used in calculation of interconnection charges. It is not possible at this time to determine the exact nature of the new regime. From 1 April 2000 until the new regime is determined, she believes costs for interconnection call origination and call termination should be based on the assumption that originating calls on eircom's network are routed in the same manner as terminating calls (see section 9.2 below).

Decision 9.1.1

Costs recoverable by eircom for conveyance of calls across it's network shall be based upon 'Efficient Operator' routing principles as applied in the development of the LRIC calculations of routing factors.

9.2 Routing Factors for eircom originating and Terminating Traffic

The routing factors set out in the RIO for calls terminating on eircom's network are different from those for calls originating on eircom's network. Calls terminating on eircom's network can be routed across eircom's network whereas calls originating on its network are routed up the network towards the tertiary switch. This can lead, in some instances, to OLOs incurring extra routing costs than if an optimum route had been taken.

eircom considers the routing principles used on its network and the difference in the routing principles for originating and terminating calls, to be appropriate, especially in light of the limited network build out in Ireland.

Following consultation of the industry on this issue, the Director considered that traffic should be routed in the manner of an efficient best practice operator. She suggested that eircom and the OLO's examine the options for more efficient routing of traffic between themselves.

The Director was also of the view that eircom should offer a Data Management service for interconnecting carriers to enable efficient routing of operators' traffic in accordance with the other operator's routing plan. The Director expected that any charge for this service would be quite low as eircom already provided basic routing information in their tandem exchanges.

The Director also noted that number portability required such software improvements on eircom exchanges.

The interim position of the Director was that the routing factor for origination traffic should be equivalent to the current routing factor for termination traffic.

She sought views on the positions she had adopted.

View of Industry

Five of seven OLOs did not respond to this particular issue. The two OLOs that did respond both thought that routing factors should be the same for originating traffic on eircom's network as terminating traffic. One thought eircom should bear the costs of the necessary databuild as a standard network development cost which all operators incur in running their businesses. One OLO thought the ODTR should set out a timeframe for the review of efficient routing principles between eircom and OLOs.

eircom disagreed that the same routing factors can be used for call origination and termination. Currently an originating call is routed up the network until it reaches an exit point to the OLO owning the called access code. To identify at what tandem node any access code can be accessed from requires each tandem node to be programmed with this data. Databuild would be significant. If this data was not updated, eircom believes there is a risk of calls looping, causing the network to crash.

eircom cannot see the advantages to be gained by OLOs and recommend that the current arrangements be confirmed. Concerning data management, eircom noted that such a service is already available in the RIO under service schedule 102.

Position of the Director

The Director is aware that eircom differentiates its routing of calls between origination and termination, but she does not accept that eircom's actual differentiation should necessarily be reflected in differentiated interconnection rates.

Based on the position set out above in section 9.1, the Director proposes that the 'Efficient Operator' routing principle be applied to this specific scenario and she expects that the ongoing LRIC work will provide a solution in the longer term.

For rates from 1 April 2000 until new costing and routing information is available from the LRIC exercise, she intends the costs for interconnection call origination and call termination to be based on the assumption that originating calls on eircom's network are routed in the same manner as terminating calls. She believes that this routing represents a surrogate for efficient routing over the eircom network for any given level of buildout of an OLO's network. The Director proposes that interim rates up to 31 March 2000 will be applied using the existing routing principles of eircom.

Decision 9.2.1

Costs recoverable by eircom for originating calls to OLO networks should be those that would be incurred by an 'Efficient Operator' - based on calculations made as part of the LRIC exercise

Decision 9.2.2

From 1/4/00 until the LRIC-based calculation provides a solution in the longer-term, costs recoverable by eircom for originating calls to OLO networks should be based on the costs recoverable by eircom in terminating calls from OLOs.

Decision 9.2.3

For the Period 1/12/99 - 31/3/00 costs for interconnection call origination and call termination will be based on eircom's current routing principles.

Appendix I - Related Consultations and Decision Notices

Accounting Separation (ODTR 99/35 & ODTR 99/52[33]): Decision Notice published in May 1999 and August 1999

Document ODTR 99/35 addresses the requirement for accounting separation, the nature and extent of such separation and what information should be published on foot of such accounting separation. In also highlighted some issues relating to eircom subsidiaries that required further industry consultation. The report on these issues was published in August (ODTR 99/52).

Costing Principles (ODTR 99/43[34]): Decision Notice D8/99 published in July 1999

This Decision Notice sets out the Director's position in regard to the costing principles that should be applied when calculating interconnection costs. It considers the recommendations set out in Part 2 of the Commission Recommendation on Interconnection (98/322/EC), and addresses the appropriate methodology to be applied in establishing appropriate cost drivers and allocation methods to be used primarily for accounting separation purposes.

LRIC (Long Run Incremental Costs)(ODTR 99/38[35]): Decision Notice D6/99 published in June, 1999

A key issue that has been the subject of much discussion throughout Europe is the basis on which interconnection costs are calculated. In line with best practice throughout Europe and in particular Part 1 of the European Commission Recommendation on Interconnection (98/195/EC), the Director considers LRIC based costing to be the most appropriate basis to be used. This Decision Notice sets out the Directors position on how they may be best-applied in Ireland's liberalised environment.

Unbundled Local Loop (ODTR 00/30[36]): Decision Notice published in April 2000

The unbundling of the local loop is seen as a key enabler of competition in local telecommunications services. This report sets out the next steps in moving forward with delivering LLU, including the establishment of a forum dealing with operational issues raised by co-location.

Price Capping (99/78[37]): Decision Notice published in December 1999

This Decision Notice, in reviewing the price capping mechanism currently in place in Ireland, touches on the issue of tariff rebalancing and its relationship with price capping and sets the levels by which eircom may adjust its retail charges over the period in question.

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[33] Accounting separation and publication of financial information by telecommunications operators, Decision Notice 5/99 and consultation report and issues for further consultation (ODTR 99/35) & Accounting separation and publication of financial information by telecommunications operators, Decision Notice 10/99 and consultation report (ODTR 99/52).

[34] Costing Methodologies for use in Accounting Separation, Decision Notice and Report on Consultation.

[35] The development of Long Run Incremental Costing for Interconnection, Decision Notice D6/99 and Report on Consultation

[36] Local Loop Unbundling, Decision Notice 00/06 and Report on Consultation

[37] Information Notice: Telecommunications Tariff Regulation (Modification) Order, 1999. Price Cap on certain services provided by eircom

Internet in Ireland (ODTR 99/46[38] & 00/17[39]): Report published in July 1999; Report published in February 2000

This report concludes the second stage of a consultation on Internet in Ireland and related interconnection and access issues. The report sets out a new interconnect framework for calls to the internet that is designed to enable variety and choice in the provision of services to consumers and ensure a level playing field for Internet Service Providers and other operators in the telecoms market in Ireland

Dispute Resolution: Consultation paper (99/13)[40] issued in March 1999; Report in September 1999.

This paper sets out the dispute resolution procedure operated by the ODTR and sets out the linkages to the dispute resolution procedures and service level agreements of operators. The paper sets out the process, the scope of its application and the time scales to be followed. Disputes may arise between eircom and OLOs regarding carrier services.

Service Levels Provided to Other Licensed Operators by Licensees with Significant Market Power – (ODTR 99/48) Report on Consultation published in August 1999

This report sets out the Director's conclusions on a number of carrier services and associated service levels. completed a review of the service levels to be offered by eircom to other telecommunications operators. Service Level Agreements (SLAs) are to be introduced by eircom by 1 November 1999, in respect of key services for other licensed operators (OLOs). The report outlines the Director's position on the delivery timeframes, quality levels and maintenance terms for services provided by eircom to OLOs

Measuring Licensed Operator Performance – (ODTR 00/04): Report on Consultation published in January 2000

This document sets out the Director's current position on a programme for measuring the performance of licensed operators. The Director has defined three different categories of licencee for the purposes of this programme with different reporting parameters for each of the categories. An industry forum has been set-up to define these parameters with the first set of results due for publication in July 2001.

Interconnection rates in the Irish Telecommunications Sector (ODTR 00/14[41] & 00/15[42]);

These documents set out the Director's determinations on interconnect charges. 00/14 deals with the interim interconnection rates that applied to 1 December 1999 and the finalisation of rates for that period. 00/15 sets new interim rates for the period 1 December 1999 to 31 March 2000.

[38] Interconnect for calls destined for Internet Services and Number Translation Codes, Report on Consultation
[39] Interconnect for calls destined for Internet Services and Number Translation Codes; Decision Notice D4/00
[40] Dispute Resolution Procedures – Consultation Paper
[41] Interconnection rates in the Irish Telecommunications Sector – Decision Notice D2/00
[42] Interconnection rates in the Irish Telecommunications Sector – Decision Notice D3/00;

APPENDIX II - Acronyms used in Consultation Paper

BT	British Telecom
CAPM	Capital asset pricing model
CSI	Customer Sited Interconnect
EU	European Union
IEC	Interconnection Extension Circuits
ISI	In Span Interconnect
ISP	Internet Service Provider
NDC	National dialling code
O&M	Operations and Maintenance
ODTR	Office of the Director of Telecommunications Regulation
OLO	Other licensed operators
ONP	Open network provision
PoI	Point of Interconnect
PoP	Point of Presence
PSTN	Public switched telecommunications network
RIO	Reference interconnect offer
ROCE	Return on capital employed
SI	Statutory instrument
SMP	Significant market power
LLU	Local Loop Unbundling
USO	Universal service obligation
WACC	Weighted average cost of capital

Appendix III - SLAs for eircom Reference Interconnect Offer

1. Introduction

The Reference Interconnect Offer (RIO) of eircom has an associated "Interconnect Operations and Maintenance Manual" (O&M Manual). This manual contains an agreed list of procedures between eircom and Other Licensed Operators (OLOs), for the purposes of provision and ongoing operation of interconnect links.

However, there is currently no Service Level Agreement (SLA) for these processes, whereby:

- the standards which are set in the O&M Manual are binding on eircom and the OLO
- failure to adhere to such standards is sanctioned through a penalty payment structure.

This document sets out the Director's position on the attributes of the O&M Manual that should be the subject of an SLA. eircom is required by decision 4.1 to draw up a draft SLA, including penalties, for the processes contained in this report and submit it to the Director by 22nd May 2000]. Following approval by the Director of the eircom draft SLA, eircom will publish a final SLA in its revised RIO on 27th June 2000

2. The O&M Manual

The O&M Manual contains descriptions of a number of processes which have been agreed between eircom and the OLOs. Amongst these processes, the following have specified "target" values and are of sufficient importance to be the subject of a SLA.

Table: O&M Manual Processes for Inclusion in an SLA

Process	"Target" in O&M Manual
Pre-provisioning	
Order acknowledgement	By eircom, **within 5 working days**[43] of receipt by the Order Control Point
Offer of alternative service	By eircom, **within 10 working days** of acknowledgement of a completed order form. This will only be required if eircom is unable to offer the interconnect service requested
OLO acceptance confirmation	Acceptance of any alternative offer **within 10 working days** of receipt.
Provisioning	
Provision of circuit designations and notification of applicable acceptance test suite	Not specified currently in O&M
Notification of Ready for Test date	Not specified when this will be offered. However, testing will take place within the following 2 week period, with 3 working days' notice from the OLO. Otherwise by mutual agreement.
Service provisioning time scales	
	New Path on existing Link to an existing PoI – 8 weeks from order

[43] 0900-1700 Monday to Friday excluding public holidays

	acknowledgement
	New Path requiring new Link to an existing PoI – 10 weeks from order acknowledgement
	New Path on new Link to a new PoI using CSI[44] - 16 weeks from order acknowledgement
	New Path on new Link to a new PoI using ISI[45] - 26 weeks from order acknowledgement
	Rearrangement of existing Path - 8 weeks
Post-provisioning	
Fault reporting	24-hour, 365 day reporting Customer Service Affecting : 60 minutes initial response with status updates every 60 minutes Non-Customer Service Affecting : 1 working day, with updates every following working day
Planned maintenance	10 working days' notice by either party. No provision for over-running works.
In-service quality	
Grade of Service	<0.5% blocking in the busy hour Provided in Technical Manual but not guaranteed.
Number range allocation	
Acknowledgement of receipt	By eircom, within 5 working days
Implementation	By eircom, within six weeks of notification By OLOs, within six weeks of a bulletin from eircom.

Paragraph 1.1.1.1 of the O&M Manual states that it (the manual) is not a legal document but provides descriptions of the processes associated with implementing and operating interconnect between operators.

The ODTR has determined that such processes require a contractual framework, a Service Level Agreement, against which eircom's performance can be measured. Such a Service Level Agreement should:

- state which attributes are covered by this legally binding contract between the parties
- the levels of service which are guaranteed for each attribute
- any penalty due for non-performance against any SLA attribute.

3. Proposals for Content of the eircom RIO SLA

After reviewing the O&M Manual and the 'best practice' in Europe, the Director wishes to make the following recommendations for attributes of the eircom SLA, the standards to be set, and any conditions attached.

[44] Customer Sited Interconnect
[45] In-Span Interconnect

Where "standards" are not guaranteed, eircom should continue to make best efforts to achieve the targets set out in the O&M Manual. eircom should maintain statistics on its achievement of such targets for periodic review.

Table 2: Proposed SLA Content

SLA Attribute	Standard to be Guaranteed	Conditions
Pre-provisioning		
Forecasting of requirements by OLO	As stated in para 3.2.1.6 of the O&M Manual.	Provisioning penalties shall be waived for circuits that fall outside of the forecast maximum requirement.
Provisioning		
Notification of Ready for Test date	After 50% of the provisioning period.	Penalty to be paid for late notification.
Service provisioning time scales		
	New Path on existing Link to an existing PoI - 8 weeks from order acknowledgement	Penalty to be paid for late delivery, if the OLO fulfils all the requirements placed on it and eircom provides notice of such requirements as stated in the O&M Manual.
	New Path requiring new Link to an existing PoI - 10 weeks from order acknowledgement	As above
	New Path on new Link to a new PoI using CSI- 16 weeks from order acknowledgement	As above
	New Path on new Link to a new PoI using ISI - 26 weeks from order acknowledgement	As above
	Rearrangement of existing Path - 8 weeks	As above
Post-provisioning		
Fault reporting	24-hour, 365 day reporting Customer Service Affecting : 60 minutes initial response with status updates every 60 minutes Non-Customer Service Affecting : 1 working day, with updates every following working day	'Working hours' is redefined to become 24-hour, 365 days for interconnect services. Penalty covered by availability standards. See below.
Planned maintenance	10 working days' notice by either party. No provision for over-running works.	Penalty covered by availability standards. See below.
In-service quality		
Availability	99.9% over one year, per interconnect link. This equates to 8.76 hours per year.	Penalty payable for non-conformance

4. Penalty Regime

There should be a penalty regime. This is discussed in the main body of the text.