



Commission for
Communications Regulation

Decision Notice

Implementation of Partial Private Circuits (PPCs) –

Formalisation of Product Description and updating of Timetable

Decision No:	D17/02
Document No:	02/110
Date:	13th December 2002

An Coimisiún um Rialáil Cumarsáide

Commission for Communications Regulation

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Contents

1	Introduction	2
2	Legislation	3
3	Decision Notice Issues.....	5
3.1	PRODUCT DESCRIPTION.....	5
3.2	PROCESS DEVELOPMENT	5
3.3	TERMS AND CONDITIONS	6
3.4	COSTING.....	7
3.5	RIO SERVICE SCHEDULE	8
4	Next Steps	9
	Appendix - List of Directions	10
	Annex 1 – Product Description Partial Product Circuits Version J	12

1 Introduction

Decision Notice D10/02 directed eircom to propose, by the end of August, a product description for Partial Private Circuits. This was to be developed and agreed in the industry forum which was set up for this purpose.

This direction was made as a result of the interest which many operators expressed both in their responses to the Consultation Paper 01/47¹ and also Consultation Paper 02/27² in a wholesale data tail product known as a Partial Private Circuit. Given the positive reactions from respondents to these papers, the ODTR directed that eircom offer proposals by the end of August and that a forum be established to agree the product description and technical and operational aspects necessary for implementation. A target completion date was established of 20th December 2002.

The forum convened on the 9th September 2002, and has met regularly achieving much progress. A target date for freezing of the product description was set for 25th October 2002. However at this date it became apparent that eircom and the other licensed operators (OLOs) were not in a position to agree the product description. Repeated attempts by the forum to freeze the product failed due to lack of agreement between eircom and the OLOs. However ComReg believes it is neither necessary nor helpful to continue discussions.

ComReg considers the availability of Partial Private Circuits (PPCs) will stimulate a competitive market, provide for effective competition, encourage economic efficiency, and provide benefit to end users. ComReg therefore is issuing this Decision Notice to intervene in order to freeze the product description in the form set out in Annex 1. Given the importance of delivering this product to the marketplace in a timely fashion, to clarify and complete the process going forward ComReg is setting new dates for the negotiation of terms and conditions and the submission of cost oriented pricing submissions.

¹ 01/47 The Internet in Ireland: Communications, Transmission, and Delivery Issues July 2001

² 02/55 Eircom's Reference Interconnect Offer March 2002

2 Legislation

Both EU and Irish legislation recognise that, in the interests of developing and sustaining competition in the telecommunications sector, the ability of new entrants to the market to interconnect with the network of an incumbent operator is essential.

The most relevant legislative provisions in relation to interconnection are:

Council Directive 97/33/EC on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of the Open Network Provision (ONP (“the Directive”)), and

The European Communities (Interconnection in Telecommunication) Regulations, 1998, SI No. 15 of 1998, transposing the above Directive. (“the Regulations”)

Under the legislation, a telecommunications industry operator providing fixed public telephone networks and designated as having Significant Market Power (SMP) in that market is required to publish a Reference Interconnect Offer (RIO) which is based on market needs and to which ComReg may direct changes.

eircom as an SMP operator in the public fixed telephony services and networks market is obliged to publish a RIO under Regulation 8 of the Regulations and ComReg has the power to direct eircom to justify its RIO and where appropriate, direct the RIO to be adjusted to ensure transparency and cost-orientation. ComReg also has the power under Regulation 10 (3) to intervene on its own initiative to “specify issues which shall be included in an interconnection agreement or to lay down specific conditions to be observed by one or more parties to such an agreement”

Regulation 10(5) provides that the conditions set or the changes directed by ComReg under Regulation 10(3) may include the following conditions and changes amongst others: conditions designed to ensure effective competition, technical conditions, tariffs and supply and usage conditions. Regulation 10(6) allows ComReg at any time on its own initiative to set the period within which negotiations on interconnection shall be completed and may take steps to conclude an agreement if not reached within the period set under procedures laid down by ComReg. In exercising its functions under the Regulations, Regulation 10(1) requires ComReg to take into account a number of factors including the need, stimulate a competitive market in telecommunications services and the need to ensure satisfactory communications for users in a manner that promotes economic efficiency.

All those negotiating interconnection must do so in good faith but the Directive and Regulations place special obligations on an operator who is designated by the Director as having SMP in the market for fixed telephony networks and services. These obligations include:

- interconnection charges should follow the principles of transparency, non-discrimination and cost-orientation;

Implementation of Partial Private Circuits

- the Director may direct an organisation to justify its charges and to adjust these charges where they are not in compliance with these principles;
- the burden of proof lies on the organisation providing interconnection;
- a RIO based on market needs shall be published and the Director may direct changes to this offer;

eircom is the only operator to have been designated as having SMP in the relevant market

3 Decision Notice Issues

3.1 Product Description

In Direction 3.3 of Decision Notice D10/02³ the ODTR directed that eircom offer proposals for a wholesale interconnection Partial Private Circuit (PPC) product by the end of August 2002. The ODTR also required that a forum was established to agree the product description and technical and operational aspects necessary for implementation. A target completion date was set of 20th December 2002.

Eircom submitted their proposals and the forum convened on the 9th September 2002. Since that date it has met regularly achieving much progress. A target date for freezing of the product description was set for 25th October 2002. However at this date it became apparent that eircom and the other licensed operators (OLOs) were not in a position to agree the product description. Repeated attempts by the forum to freeze the product failed due to lack of agreement between eircom and the OLOs. However ComReg believes it is neither necessary nor helpful to continue discussions.

ComReg considers the availability of Partial Private Circuits (PPCs) will stimulate a competitive market, provide for effective competition, encourage economic efficiency, and provide benefit to end users. ComReg therefore is issuing this Decision Notice to intervene in order to freeze the product description in the form set out in Annex 1. Given the importance of delivering this product to the marketplace in a timely fashion, to clarify and complete the process going forward ComReg is setting new dates for the negotiation of terms and conditions and the submission of cost oriented pricing submissions. These directions will facilitate implementation of PPCs.

The frozen product description is Version J as set out in Annex 1 to this Decision Notice

Direction 3.1

The Commission for Communications Regulation directs that Version J, published as Annex 1 to this Decision Notice, is the frozen product description for Partial Private Circuits.

3.2 Process Development

To facilitate implementation of the product, it is obvious that inter-operator processes must be developed and implemented. Some limited process work has already begun, and ComReg considers it imperative that progress is expedited.

ComReg requires that eircom develop, with appropriate OLO involvement, a detailed Inter-Operator Process Manual. This Inter-Operator Process Manual must contain at a minimum the high level processes set out in the frozen product description attached at Annex 1.

³ Document 02/55 Decision Notice D10/02 eircom's Reference Interconnect Offer June 2002

This must be completed by 7th February 2003 and submitted to ComReg. ComReg will provide such assistance as is necessary in order to meet this deadline.

These directions are without prejudice to ComReg's powers and obligations under the law, including but not limited to, the power to direct all parties to negotiate in good faith with regard to the relevant issues contained herein.

Direction 3.2

The Commission for Communications Regulation directs that eircom, using the frozen product description (published as Annex 1 to this Decision Notice), develop with appropriate OLO involvement, an Inter-Operator Process Manual. The Commission for Communications Regulation directs that the Inter-Operator Process Manual be concluded and submitted to the Commission for Communications Regulation no later than close of business on the 7th February 2003. The Commission will provide support as required to meet this deadline

3.3 Terms and Conditions

There is a clear need for eircom, when developing and introducing new services in response to OLO demand, to ensure that the terms and conditions for wholesale products, are negotiated with OLOs. Eircom have indicated in discussions with ComReg that they propose to submit the terms and conditions, as part of the RIO Service Schedule to ComReg for scrutiny. Eircom have indicated that they do not propose to discuss these with OLOs. ComReg considers this to be inappropriate and inefficient when introducing a wholesale product that is to meet OLOs needs and hence requires eircom to negotiate the terms and conditions with OLOs so that all interested parties needs are met.

It is recognised that there is a necessary connection between development of processes and negotiation of terms and conditions. ComReg is of the opinion that this should be completed in parallel. That is to say that as one process is completed, the terms and conditions associated with that process should then be negotiated.

Negotiation of terms and conditions should be completed by 11th February 2003. ComReg will provide such assistance as is necessary in order to meet this deadline.

These directions are without prejudice to ComReg's powers and obligations under the law, including but not limited to, the power to direct all parties to negotiate in good faith with regard to the relevant issues contained herein.

Direction 3.3

The Commission for Communications Regulation directs that eircom, using the frozen product description (published as Annex 1 to this Decision Notice) and in parallel with the development of the Inter Operator Process Manual referenced in Direction 3.2, produce a draft set of terms and conditions. Eircom are further directed to provide these draft terms and conditions to OLOs and are directed to negotiate these with appropriate OLO representatives. Eircom are directed that this process must be concluded no later than close of business on the 11th February 2003. The Commission will provide support as required to meet this deadline.

3.4 Costing

The ODTR wrote to eircom on the 25th November 2002 requesting a pricing submission for the PPC product from eircom by the 18th December 2002. This was a date proposed by eircom in their project plan dated 4th November 2002. The date of 18th December 2002 was of course subject to an early product freeze. As the product has only now been frozen, ComReg considers it appropriate to revise this deadline.

As the date for process development completion follows the date for product freeze, ComReg also considers it appropriate that this now become a two stage process with a fully cost oriented pricing submission required for Partial Private Circuit product elements of connection, disconnection, and recurring charges by 7th February 2003, and for all other process elements by 14th February 2003.

Eircom's pricing submission for the product elements should be computed on the basis of Long Run Incremental Cost (LRIC) and should be consistent with the computation of conveyance rates.

In order to provide greater clarification ComReg intends to issue a Decision Notice to eircom to make directions in respect of pricing structure and the appropriateness of service versus capacity based charging by December 20th 2002.

Direction 3.4.1

The Commission for Communications Regulation directs that eircom provide to the Commission a fully cost oriented pricing submission for the PPC product with full justification for Partial Private Circuit product elements of connection, disconnection and recurring charges no later than close of business on 7th February 2003. Eircom are directed that pricing submissions should be computed on the basis of Long Run Incremental Cost (LRIC) and should be consistent with the computation of conveyance rates

Direction 3.4.2

The Commission for Communications Regulation directs that eircom provide to the Commission a fully cost oriented pricing submission, with full justification for all other Partial Private Circuit process elements no later than close of business on 14th February 2003.

3.5 RIO Service Schedule

Once Directions 3.2, 3.3, 3.4.1, and 3.4.2 have been complied with, eircom will be in a position to submit a draft Reference Interconnect Offer (RIO) Service Schedule for ComReg scrutiny and approval for inclusion in the RIO.

Direction 3.5.1

The Commission for Communications Regulation directs that eircom submit a draft Reference Interconnect Offer Service Schedule for the Wholesale Interconnect Partial Private Circuit Product by the 14th February 2003.

Direction 3.5.2

The Commission for Communications Regulation directs eircom to offer a Wholesale Interconnect Partial Private Circuit Product with associated processes, terms and conditions, and prices from 15th February 2003.

4 Next Steps

As previously stated, it should be noted that ComReg intends to issue a Decision Notice to eircom to make directions in respect of pricing structure and the appropriateness of service versus capacity based charging by December 20th 2002.

ComReg will also convene the first meetings of eircom and OLOs to discuss processes, and terms and conditions, in the week following this Decision Notice.

Appendix - List of Directions

For ease of reference, the following sets out a list of Directions set out in this Decision Notice

Direction 3.1

The Commission for Communications Regulation directs that Version J, published as Annex 1 to this Decision Notice, is the frozen product description for Partial Private Circuits

Direction 3.2

The Commission for Communications Regulation directs that eircom, using the frozen product description (published as Annex 1 to this Decision Notice), develop with appropriate OLO involvement, an Inter-Operator Process Manual. The Commission for Communications Regulation directs that the Inter-Operator Process Manual be concluded and submitted to the Commission for Communications Regulation no later than close of business on the 7th February 2003. The Commission will provide support as required to meet this deadline

Direction 3.3

The Commission for Communications Regulation directs that eircom, using the frozen product description (published as Annex 1 to this Decision Notice) and in parallel with the development of the Inter Operator Process Manual referenced in Direction 3.2, produce a draft set of terms and conditions. Eircom are further directed to provide these draft terms and conditions to OLOs and are directed to negotiate these with appropriate OLO representatives. Eircom are directed that this process must be concluded no later than close of business on the 7th February 2003. The Commission will provide support as required to meet this deadline.

Direction 3.4.1

The Commission for Communications Regulation directs that eircom provide to the Commission a fully cost oriented pricing submission for the PPC product with full justification for Partial Private Circuit product elements of connection, disconnection and recurring charges no later than close of business on 7th February 2003. Eircom are directed that pricing submissions should be computed on the basis of Long Run Incremental Cost (LRIC) and should be consistent with the computation of conveyance rates

Direction 3.4.2

The Commission for Communications Regulation directs that eircom provide to the Commission a fully cost oriented pricing submission, with full justification for all other Partial Private Circuit process elements no later than close of business on 14th February 2003.

Direction 3.5.1

The Commission for Communications Regulation directs that eircom submit a draft Reference Interconnect Offer Service Schedule for the Wholesale Interconnect Partial Private Circuit Product by the 14th February 2003.

Direction 3.5.2

The Commission for Communications Regulation directs eircom to offer a Wholesale Interconnect Partial Private Circuit Product with associated processes, terms and conditions, and prices from 15th February 2003.

Annex 1 – Product Description Partial Product Circuits Version J

Partial Private Circuit
Product Description

Document Control

Document name	Partial Private Circuits Product Description
Document Owner	Eircom Ltd.
Document Type	Microsoft Word
Last updated	13 December 02
Version	J
Status	Frozen

Revision History

Version	Date	Revised by	Revision details
A	29 August 02	Eircom	
B	27 September 02	Eircom	Revised based on OLO comments on version A plus eircom proposals
C	4 October 02	Eircom	Revised based on OLO comments on version B on 2 October 02, plus eircom proposals
D	11 October 02	Eircom	Revised based on Statement of Requirements submitted by OLO, plus eircom proposals
E	1 November 02	Eircom	Revised based on OLO meetings 16 th and 30 th Oct., plus eircom proposals
F	12 November 02	Eircom	Revised based on OLO meeting 6 Nov, plus eircom proposals
G	25 November 02	Eircom	Revised based on OLO meeting 21 Nov, plus eircom proposals
H	3 December 02	Eircom	Revised based on OLO meeting 27 Nov, plus eircom comments

Version	Date	Revised by	Revision details
I	9 December 02	Eircom	Revised based on OLO meeting 6 Dec, plus eircom comments
J	13 December 02	ComReg	Directed product description

TABLE OF CONTENTS

Preface

This document defines the *eircom* Product Description to provide Partial Private Circuits (PPCs) as mandated by the ODTR in D10/02.

This document is without prejudice to any future position that may be adopted relative to the provision of PPCs. It should be read in conjunction with the associated documents detailing processes, technical specifications and service level agreements, to be published according to applicable publication arrangements.

Intended audience for this document includes

- (i) *eircom* wholesale employees involved in the development of the service
- (ii) OLOs involved in the ComReg forum.

Introduction

This document defines the product description for Partial Private Circuits. It is currently a draft document which will be finalised within the ComReg forum established for that purpose.

Product Description

A PPC is an interconnect service providing transparent (that is, not circuit switched) transmission capacity from an end user premises termination points to an Operator's Point of Handover. The end user may be a third party (for example, an end customer) or the OLO in whose name the circuit is ordered.

The points of demarcation between the two networks will be the Point Of Handover (PoH) between an *eircom* exchange and an OLO Point of Presence (PoP).

The point of demarcation between *eircom* and the end user is a termination point located in the end user premises. Where the end user is an OLO, the termination point may also be a DDF or ODF.

The product is available to licensed OLOs only.

Product Components

A PPC consists of two components:

1. A Transport Link, being the link between the eircom network and the OLO network. The Transport Link can be provided using either Customer Sited Handover (CSH) or In-Span Handover (ISH) between the eircom serving exchange, and the OLO's PoP, or using an existing Interconnect Link provided under service schedule 101 of the eircom RIO for In-Span Interconnection or STM-1 Interconnect Access¹, and
2. An End User Link (EUL), being the link between the end user NTU/NTP, via the eircom exchange serving that end user, into and across the eircom network to an OLO specified Transport Link. The end user may be a third party (for example, an end customer) or the OLO in whose name the EUL is ordered.
For the avoidance of doubt, EULs will be aggregated onto higher bandwidth transmission systems, as appropriate, within the eircom transmission network.

Customer Sited Handover (CSH) Transport Link

Using CSH, a point to point 2mb, STM-1 or STM-4 connection is provided by eircom between the eircom nominated serving exchange and the OLO's premises. This is provided over the eircom network. Eircom will terminate the connection on appropriate eircom-provided termination equipment in the OLO premises.

Eircom will seek to minimise the cost of delivery of all interconnect circuits (PPCs and voice interconnect). Infrastructure sharing is one method by which this will be facilitated and will be offered as part of the product.

See Annex D for an illustrative diagram showing how this would be achieved.

CSH Handover

The PoH is at the eircom provided termination equipment in the OLO's premises, at which eircom will present the 2mb, STM-1 or STM-4 to the OLO. Extraction of individual circuits will be the responsibility of the OLO. Robust mechanisms and processes for maintenance and repair of PPC services (including channelised STM-1 and channelised 2mb services) will be developed and agreed with OLO.

OLO access to the CSH Transport Link

The OLO will connect to the 2mb and/or STM-x Transport Link via electrical or optical interface as appropriate. The electrical interface is specified in ITU-T Recommendation G.703. The optical interface is specified in ITU-T Recommendations G.707 and G.957.

CSH Capacity

The maximum capacity of the PoH will be 1984kb at 2mb, 63 x 2mb or 3 x 34mb at STM-1, and 252 x 2mb or 12 x 34mb at STM-4, or equivalents. Within the capacity supplied, the individual End User Links can be activated as required.

CSH availability

CSH connectivity will be supported between the OLO nominated PoP and the appropriate² eircom recommended exchange as listed in Annex A.

Annex A will be amended as required from time to time by eircom as its network evolves. A process for OLO notification of such amendments will be developed and agreed at the appropriate OLO process group³.

In Span Handover (ISH) Transport Link

Using ISH, an STM-1 or STM-4 connection is provided by eircom between the eircom nominated serving exchange and a PoH located between the OLO's premises and the eircom serving exchange. Eircom will provide an STM1/4 bearer over fibre to the PoH, and the OLO completes the link back to its own premises using its own network. The PoH is the ODF at which the bearers from an OLO's cable are connected to the eircom bearers.

A spliced ISH product will be made available when a spliced ISI product is developed and offered by eircom.

Eircom will seek to minimise the cost of delivery of all interconnect circuits (PPCs and voice interconnect). Infrastructure sharing is one method by which this will be facilitated and will be offered as part of the product.

See Annex D for an illustrative diagram showing how this would be achieved.

ISH Point of Handover

The physical location of the PoH may be in an underground manhole or in a street cabinet, and is provided by the OLO. It should be located not more than 100 metres from the curtilage of the eircom serving exchange.

The closure to be used in either event is the Raychem, FOSC 400 Xcon closure, which is an ODF type closure for 12 fibre to 12 fibre.

Eircom will terminate its fibres on one side of the ODF, and the OLO will terminate its fibres on the other side. The fibres will be connected using an OLO provided patch cord.

OLO Access to the ISH Transport Link

The OLO is to use the same optical SDH interface as eircom. This will be either an S1.1 interface at STM-1, or S4.1 at STM-4. The interfaces should be in accordance with ITU-T Recommendation G.957.

ISH Capacity

The maximum capacity of the SDH PoH will be 63 x 2mb or 3 x 34mb at STM-1, and 252 x 2mb or 12 x 34mb at STM-4, or equivalents. The individual End User Links within the STM-x connection can be activated as required.

ISH availability

ISH connectivity at STM-1 level to the Point of Handover will be offered from any eircom exchange listed in Annex A.

ISH connectivity at STM-4 level to the Point of Handover will be offered from any eircom exchange listed in Annex A.

Annex A will be amended as required from time to time by eircom as its network evolves. A process for OLO notification of such amendments will be developed and agreed at the appropriate OLO process group⁴.

End User Link

This is the circuit from the eircom serving exchange to the end user, via the eircom exchange serving that end user. For the avoidance of doubt, the end user may be the OLO in whose name the EUL is ordered.

See Annex D for an illustrative diagram.

End User Link Termination Point

The termination point for the End User Link will be at an appropriate eircom provided Network Termination Unit / Network Termination Point at the end user's premises, which in some cases may be a Digital Distribution Frame or an Optical Distribution Frame.

The other end of the EUL will be at a point where it is aggregated onto an OLO-specified Transport Link.

End User Link Capacity

End User Links will be provided at the following levels:

- (a) n x 64kb circuits up to 1984kb
- (b) 2048kb
- (c) 34mb
- (d) STM-1

Where sub 2mb EULs are provided, these will be aggregated onto either an individual OLO-nominated 2mb Transport Link, or on discrete channels within the OLO-nominated Transport Link.

End User Link Availability

An End User Link will be provided in accordance with prevailing wholesale leased line arrangements, as appropriate, including provision and repair, and may be dependant on:

- (a) Available appropriate capacity both at and between both the end user's premises and the eircom local exchange
- (b) Available capacity on an OLO-specified Transport Link.
- (c) Available capacity across the eircom core network

Where capacity issues are identified, the EUL will be provided on a non-standard basis. The process for ordering and provisioning for EULs for which there is a lack of capacity on the corresponding Transport Link will be developed at the appropriate industry forum.

Service Management

This is detailed in Annex B.

Price

Pricing will be developed by eircom, and agreed between eircom and ComReg on a bilateral basis.

Terms and Conditions

A new RIO schedule will be developed for this product in accordance with this product description as developed and in accordance with the service management processes to be developed with OLOs.

The terms and conditions will include provisions:

- Migration of existing leased lines
- Contract periods
- Service Level Agreement
- Operations and Maintenance

Note that SLA and O&M processes may be referred out to in RIO as per Carrier Services SLA.

Process timelines, service level metrics and forecasting requirements will be developed and agreed at the appropriate industry process discussions.

ANNEX A

The following is the list of eircom exchanges at which CSH / ISH links will be initially offered. This list will be updated by eircom from time to time.

Section 1: CSH Transport Link at STM-x:

Exchange
Adelaide Road
Bantry
Belcamp
Birr
Blanchardstown
Bray
Carlow
Castlebar
Castleblaney
Castlerea
Castletroy
Cavan
Churchfield
Clondalkin
Clonmel
Clontarf
Crown Alley
Crumlin
Dame Court A
Dolphins Barn
Drogheda
Dun Laoghaire
Dundalk
Ennis
Letterkenny
Mallow
Merrion
Mervue
Mullingar
Naas
Palmerstown
Portlaoise
Priory Park
Quaker Road
Rathedmond
Roches Street
Roslevin
Sandyford
Shantalla
Summerhill
Swords
Terenure
Tralee
Waterford Central
Waterford Tycor
Wexford
Whitehall

Section 2: ISH Transport Link at STM-x:

Exchange
Adelaide Road
Bantry
Belcamp
Birr
Blanchardstown
Bray
Carlow
Castlebar
Castleblaney
Castlerea
Castletroy
Cavan
Churchfield
Clondalkin
Clonmel
Clontarf
Crown Alley
Crumlin
Dame Court A
Dolphins Barn
Drogheda
Dun Laoghaire
Dundalk
Ennis
Letterkenny
Mallow
Merrion
Mervue
Mullingar
Naas
Palmerstown
Portlaoise
Priory Park
Quaker Road
Rathedmond
Roches Street
Roslevin
Sandyford
Shantalla
Summerhill
Swords
Terenure
Tralee
Waterford Central
Waterford Tycor
Wexford
Whitehall

Partial Private Circuit Product Description



Section 3: 2mb CSH Transport Link

To be developed prior to product launch

ANNEX B

This Annex will deal with process activities associated with PPCs as developed and agreed as part of the project within the appropriate industry fora.

1. Forecasting Process:

This will describe the process for producing and reviewing forecasts for End User Links above 2mb, and for Transport Links. Forecasting horizons will be developed and agreed with OLOs at the appropriate forum as required.

2. Ordering Process:

This will describe the process for the placing of orders for PPCs, and will be developed and agreed with OLOs at the appropriate industry forum.

3. Order Provisioning Process:

This will describe the process for the implementation of the various PPC elements as ordered using the ordering process, and will be developed and agreed with OLOs at the appropriate industry forum. It is proposed that it includes processes for new provides, moves, changes and ceases for both Transport Links, and End User Links.

4. Migration

It is proposed that a migration window will be developed and agreed between eircom and each OLO for the purpose of processing a bulk migration of applicable circuits⁵.

It is proposed that a migration process will also be developed for the migration of individual applicable circuits which were not included in a bulk migration.

These processes can be applied to existing wholesale leased line terminations that are subsequently migrated, in which case these terminations may already be in place.

4. Fault Management and Repair

This process will describe the mechanisms for the fault management and repair relating to an in-service PPC, and will be developed and agreed with OLOs at the appropriate industry forum.

5. Network Operation and Maintenance

This section will describe the processes for the operational and maintenance issues relating to an in-service PPC, and will be developed and agreed with OLOs at the appropriate industry forum.

6. Miscellaneous Processes

This will cover any miscellaneous processes that do not fall within the above categories.

ANNEX C

SERVICE LEVEL AGREEMENT

An SLA will be developed to cover the end-to-end service as provided to the customer. It is proposed that this SLA contains appropriate commitments around process points which will be identified during industry process discussions. Examples will be taken from current practice where appropriate.

Additional commitments and performance metrics will be included as they become relevant.

ANNEX D

PRODUCT DIAGRAMS

(FOR ILLUSTRATION ONLY)

SECTION 1: TYPICAL DELIVERY OF $n \times 64\text{kb}$ EULs (up to 1984kb) OVER 1 x 2MB CSH TRANSPORT LINK

SECTION 2: TYPICAL DELIVERY OF EULs (PPCs ONLY) OVER 1 x STM-1 OR STM-4 CSH TRANSPORT LINK

SECTION 3: TYPICAL DELIVERY OF EULs (PPCs ONLY) OVER 1 x STM-1 OR STM-4 ISH TRANSPORT LINK

SECTION 4: TYPICAL DELIVERY OF VOICE INTERCONNECT CIRCUITS AND PPCs OVER 1 X STM-1 OR STM-4 CSH TRANSPORT LINK

SECTION 5: TYPICAL DELIVERY OF VOICE INTERCONNECT CIRCUITS AND PPCs OVER 1 X STM-1 OR STM-4 ISH TRANSPORT LINK

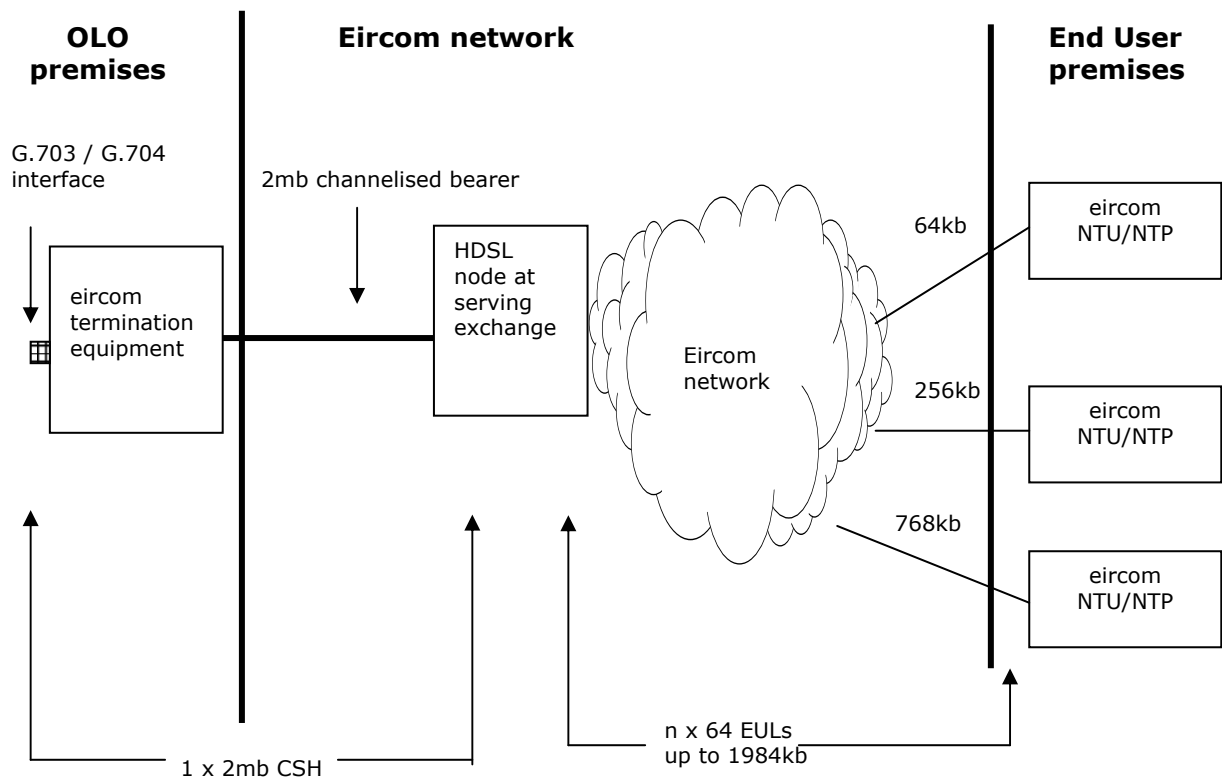
SECTION 6: TYPICAL INFRASTRUCTURE USED TO DELIVER CSI CIRCUITS

SECTION 7: TYPICAL INFRASTRUCTURE USED TO DELIVER SUB-2MB, 2MB AND >2MB CIRCUITS

SECTION 8: TYPICAL DELIVERY OF AN END USER LINK

ANNEX D SECTION 1

TYPICAL DELIVERY OF $n \times 64\text{kb}$ EULs (up to 1984kb) OVER 1 \times 2MB CSH TRANSPORT LINK

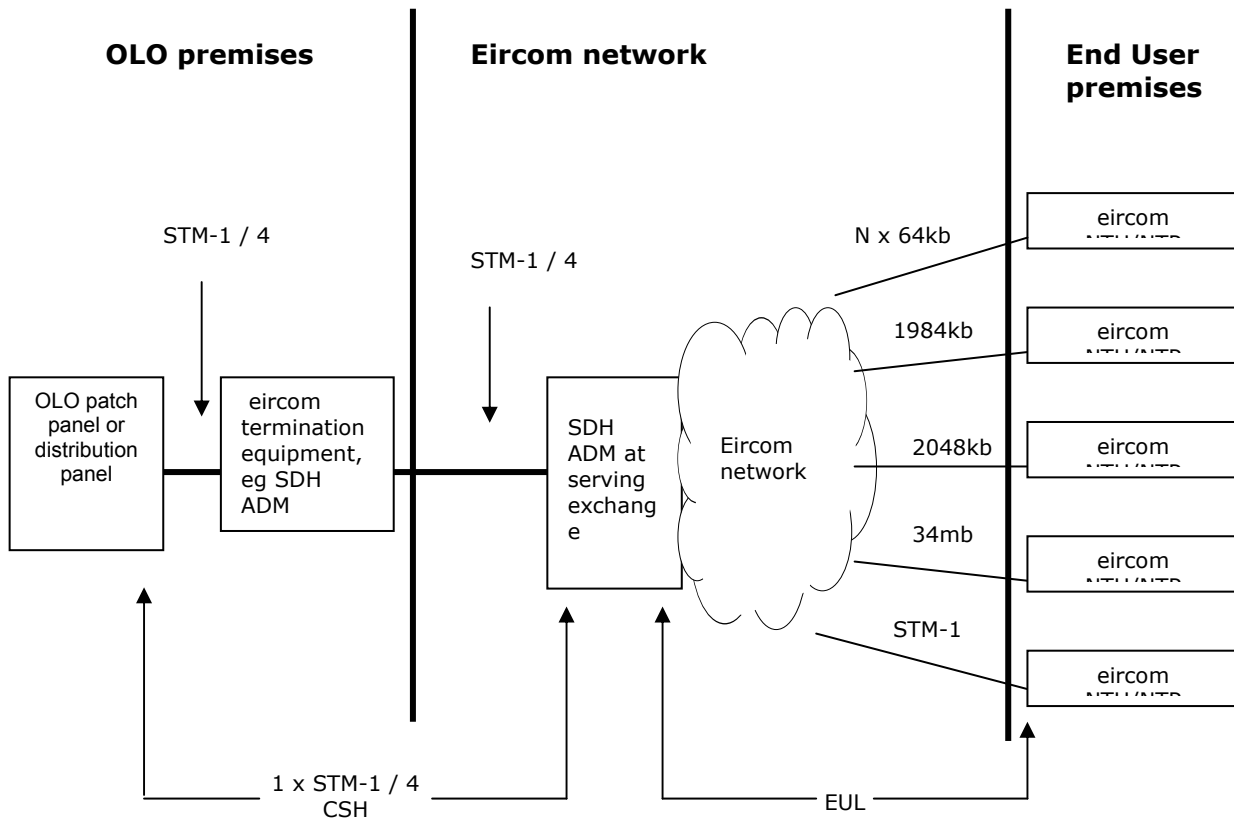


Notes:

1. Each 2mb CSH bearer has a maximum payload of 1984kb. Timeslot 0 is used for framing.
2. Each bearer will be delivered on an individual eircom termination equipment at the OLO premises.
3. Where multiple 2mb CSH bearers are delivered, eircom may choose to install a node at the OLO's premises to support multiple G.703 / G.704 terminations. The decision to install such a node will be taken where this represents a more efficient solution than the installation of individual termination equipment for each bearer.
4. The processes and procedures to support this service (including maintenance and fault repair) will be developed and agreed within the industry process groups.
5. The process for migrating existing sub-2mb leased lines onto a 2mb CSH (including the re-use or removal of existing termination equipment, where applicable) will be developed and agreed within the industry process groups.

ANNEX D SECTION 2

TYPICAL DELIVERY OF EULs (PPCs ONLY) OVER 1 x STM-1 OR STM-4 CSH TRANSPORT LINK

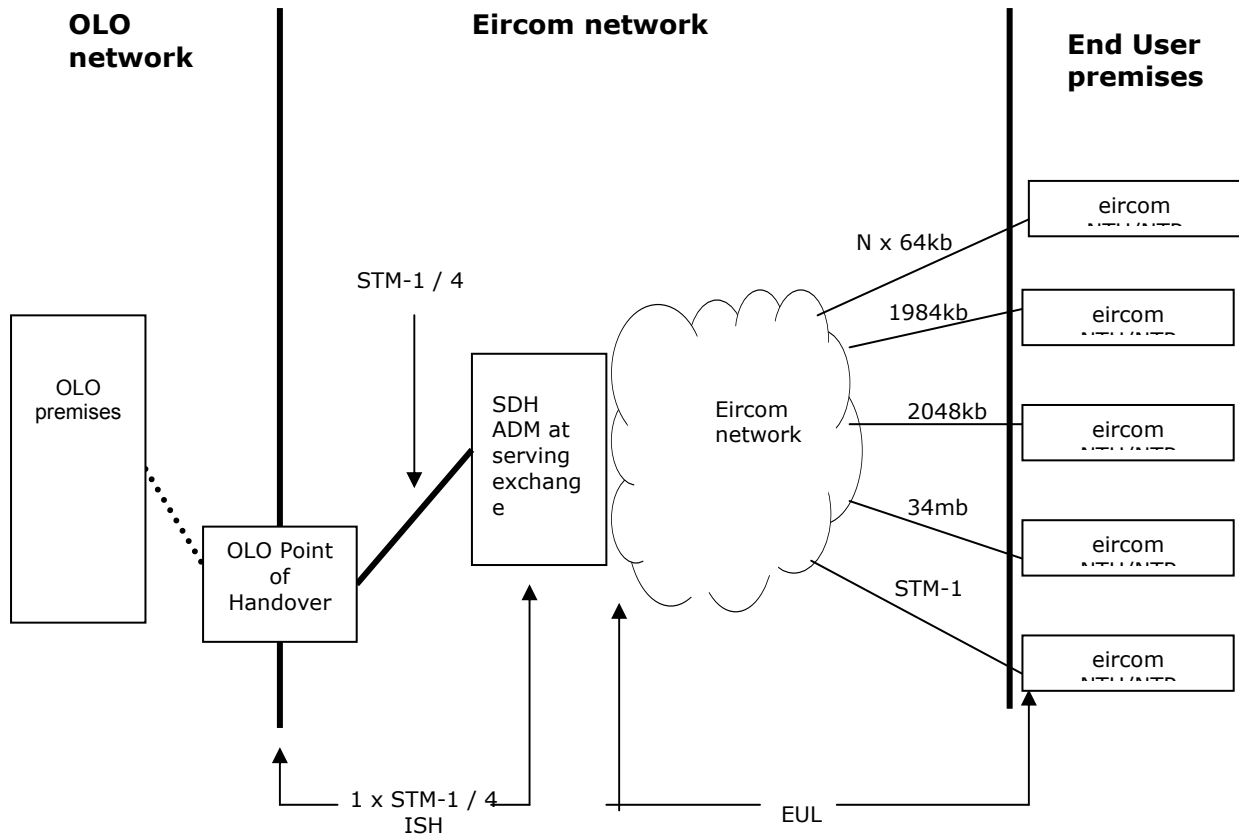


Notes:

1. Each STM-1 / 4 CSH bearer will be delivered on an eircom-provided SDH ADM at the OLO's premises.
2. An STM-1 EUL will be delivered over a channelised STM-4 Transport Link.
3. The processes and procedures to support this service (including the exchange of information on channel structure) will be developed and agreed within the industry process groups.
4. The process for migrating existing leased lines onto a STM-x CSH Transport Link (including the re-use or removal of existing termination equipment, where applicable) will be developed and agreed within the industry process groups.

ANNEX D SECTION 3

TYPICAL DELIVERY OF EULs (PPCs ONLY) OVER 1 x STM-1 OR STM-4 ISH TRANSPORT LINK



Notes:

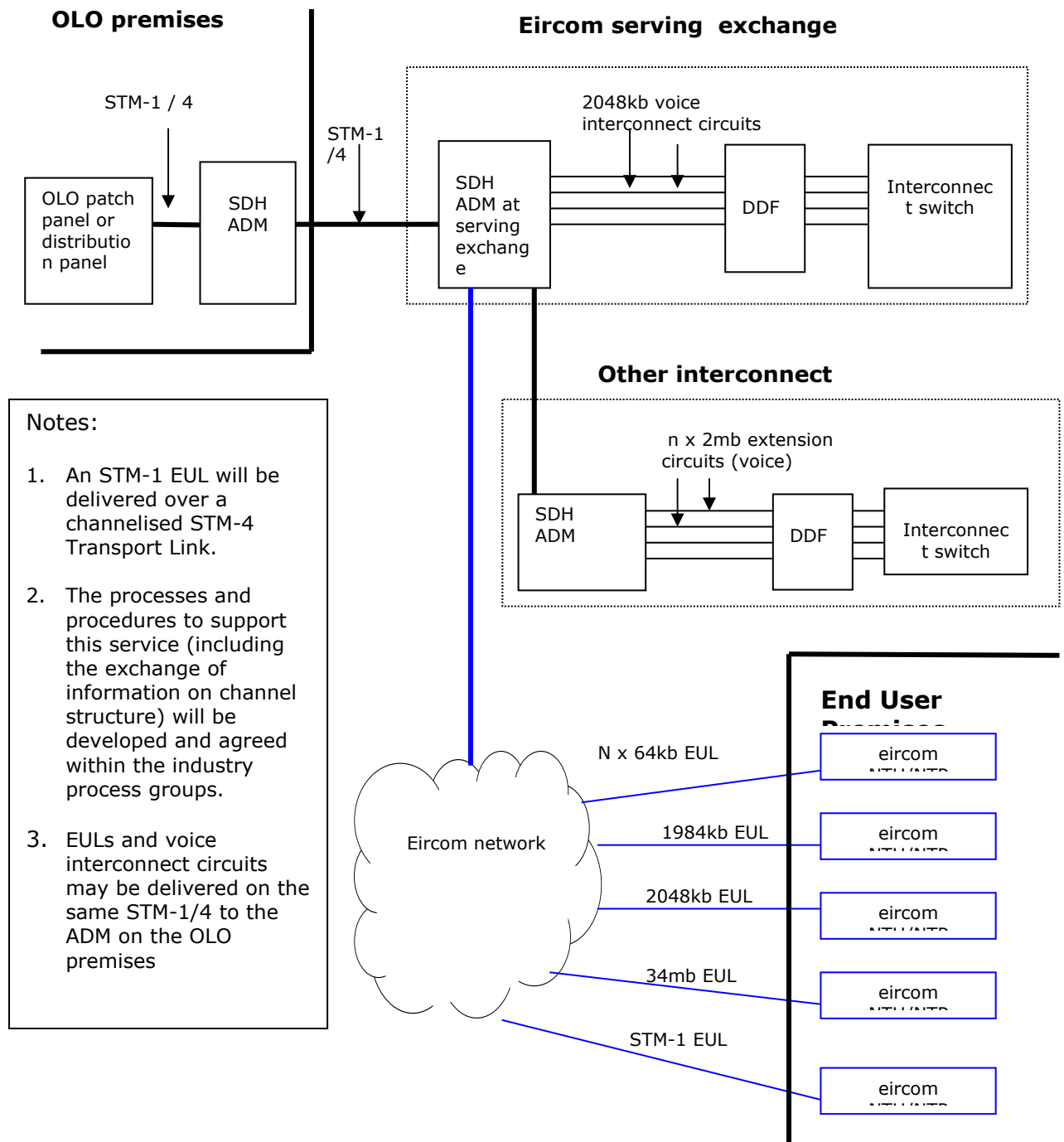
1. An STM-1 EUL will be delivered over a channelised STM-4 Transport Link.
2. The processes and procedures to support this service (including the exchange of information on channel structure) will be developed and agreed within the industry process groups.
3. The process for migrating existing leased lines onto a STM-x ISH Transport Link (including the re-use or removal of existing termination equipment, where applicable) will be developed and agreed within the industry process groups.

ANNEX D SECTION 4

TYPICAL DELIVERY OF VOICE INTERCONNECT CIRCUITS AND PPCs OVER 1 X STM-1 OR STM-4 CSH TRANSPORT LINK

BLUE LINES INDICATE THE SHARING OF PPC EULs

NOTE: MODIFICATION OF THE EXISTING CHANNELISED STM-1 INTERCONNECT ACCESS PRODUCT WILL BE REQUIRED TO FACILITATE THIS OPTION OVER EXISTING STM-1 INTERCONNECT ACCESS INFRASTRUCTURE

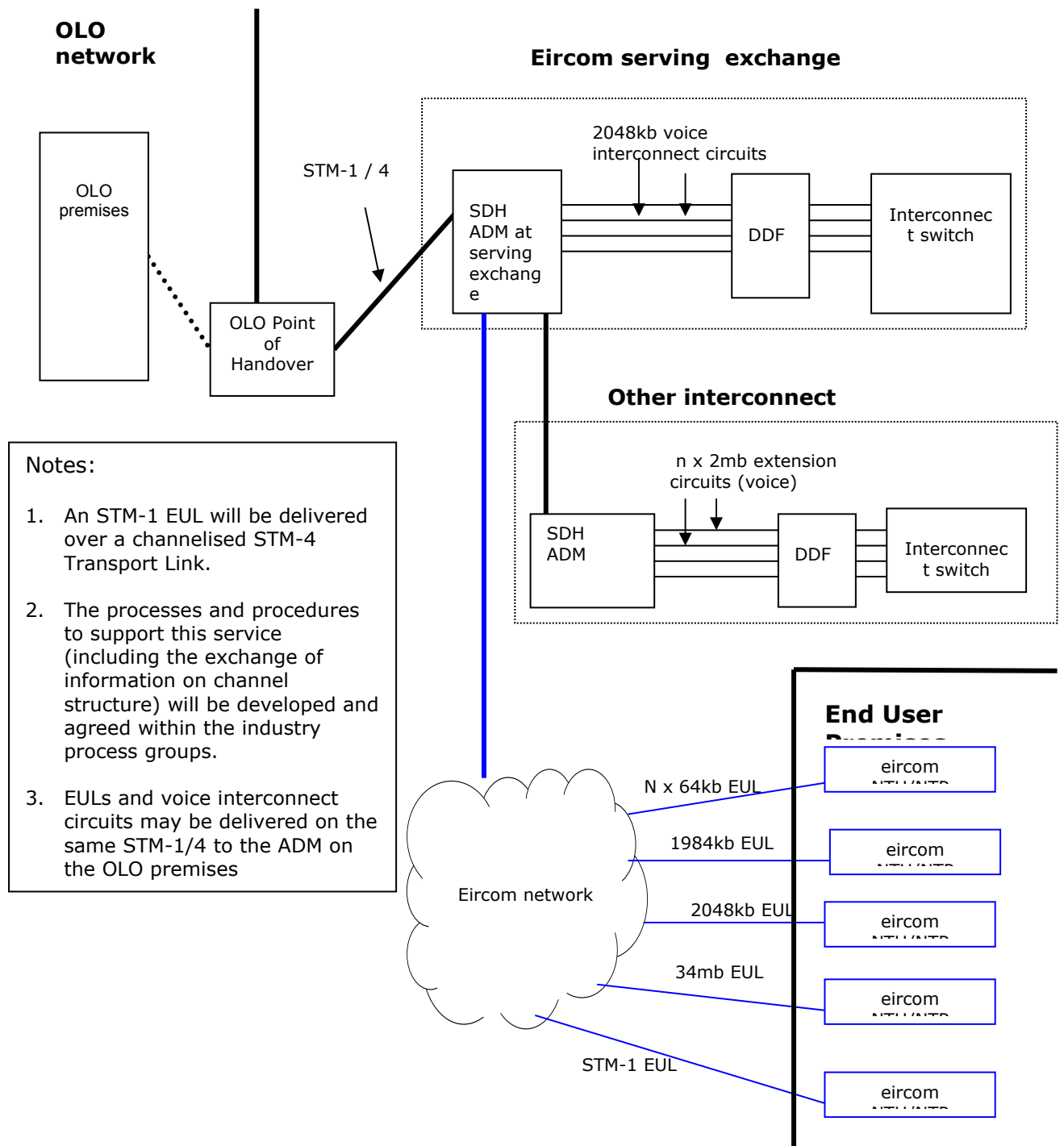


ANNEX D SECTION 5

TYPICAL DELIVERY OF VOICE INTERCONNECT CIRCUITS AND PPCs OVER 1 X STM-1 OR STM-4 ISH TRANSPORT LINK

BLUE LINES INDICATE THE SHARING OF PPC EULs

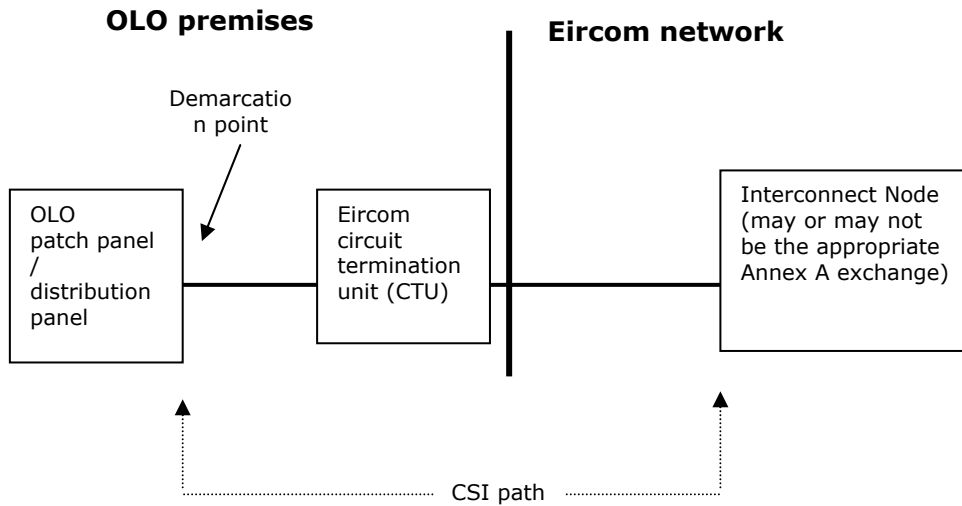
NOTE: MODIFICATION OF THE EXISTING ISI PRODUCT WILL BE REQUIRED TO FACILITATE THIS OPTION OVER EXISTING ISI INFRASTRUCTURE



ANNEX D SECTION 6

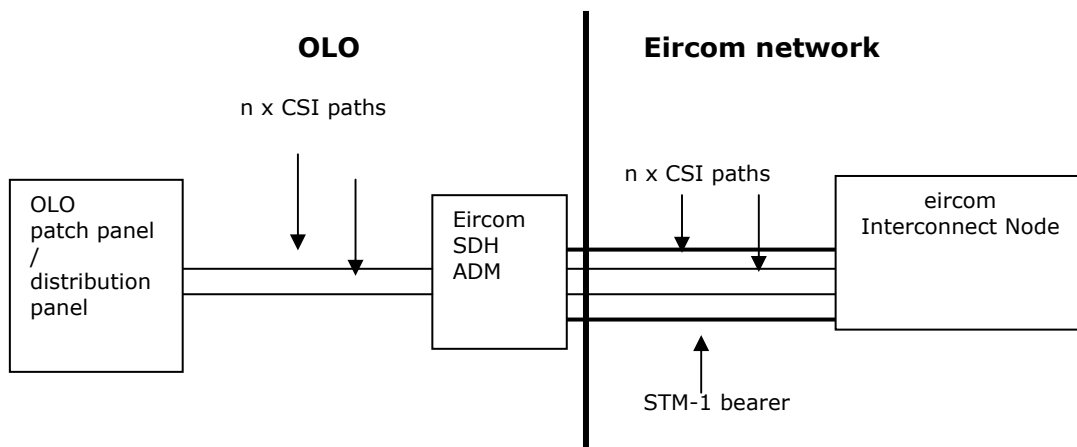
TYPICAL INFRASTRUCTURE USED TO DELIVER CSI CIRCUITS

Currently, a CSI circuit is provided as follows:



Infrastructure sharing over individual CSI paths is not possible, as the point to point circuit is a clear 2048kb channel. There is no capacity available on the channel for PPC circuits.

Where multiple CSI paths are delivered to the same OLO premises, while these may be delivered separately to the OLO's DDF, they may be provided over an STM-1 bearer to the OLO's premises, as follows:



In this scenario, the OLO may elect to designate the STM-1 bearer as an STM-1 CSH. Available capacity on the bearer may then be utilised for EULs or voice interconnect circuits. The $n \times$ CSI paths provided from the eircom SDH ADM to the OLO's DDF will be replaced by a single STM-1 bearer.

The processes for migrating the bearer to an STM-1 CSH, and migrating the individual CSI paths accordingly, will be developed and agreed with the industry process groups.

ANNEX D SECTION 7

TYPICAL INFRASTRUCTURE USED TO DELIVER SUB-2MB, 2MB AND >2MB CIRCUITS

SUB-2MB CIRCUITS

Individual sub-2mb circuits are normally provided over HDSL. An OLO can currently aggregate these circuits over a single 2mb bearer to an OLO's premises using the Channelised Access product. When the PPC product is offered, the OLO may elect to aggregate sub-2mb circuits onto a single 2mb CSH, to be delivered as a single 2mb Transport Link to its premises rather than as individual sub-2mb circuits.

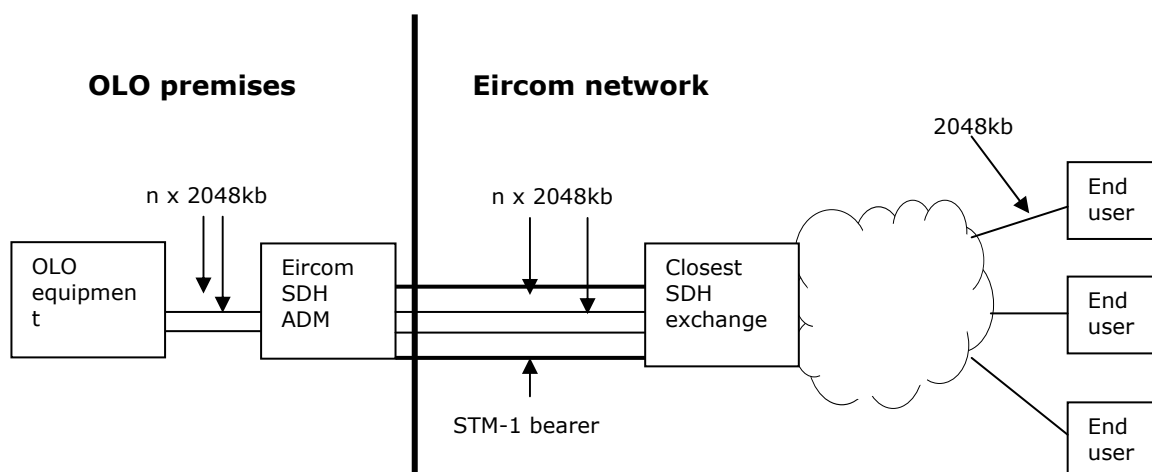
Infrastructure sharing is not possible in this scenario. The maximum payload of the 2mb CSH Transport Link is 1984kb. Voice circuits require a payload of 2048kb.

2MB CIRCUITS

This is where the OLO has existing end to end 2048kb data circuits.

Infrastructure sharing over a single 2048kb circuit is not possible, as voice circuits require the full 2048kb payload. If one or more 64kb channels are used for data, then the full 2048kb payload required for voice is unavailable.

Where multiple 2mb paths are delivered from the same OLO premises, these may be delivered as follows:



In this scenario, the OLO may elect to designate the STM-1 bearer as an STM-1 CSH. Available capacity on the bearer may then be utilised for EULs or voice interconnect circuits. The n x 2048kb paths provided from the eircom SDH ADM to the OLO's DDF will be replaced by a single STM-1 bearer.

The processes for migrating the bearer to an STM-1 CSH, and migrating the individual 2048kb circuits to EULs, will be developed and agreed with the industry process groups.

>2MB CIRCUITS

Where an OLO has an existing STM-1 circuit from their premises to an end user (the end user may be retail customer or the OLO itself), the OLO has the opportunity to seek to migrate the STM-1 to a PPC by effectively “breaking up” the circuit into its equivalent PPC components.

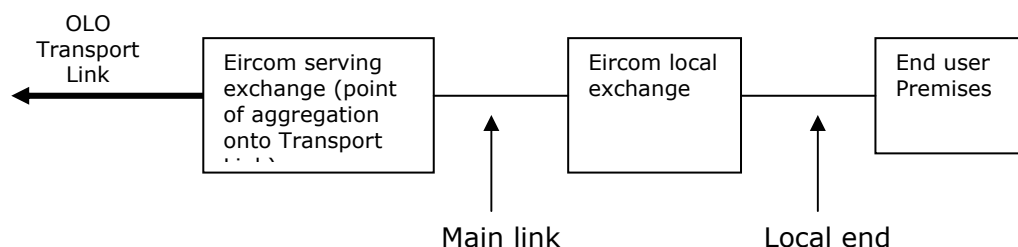
The OLO may not, however, migrate the circuit to an STM-1 CSH and an STM-1 End User Link, as this is a point to point leased line, not a Partial Private Circuit.

Migration to PPC would be beneficial where the end user is not fully utilising the capacity of the STM-1. By migrating the end user end of the circuit to an End User Link off the migrated STM-1 CSH Transport Link, the OLO may choose to provide additional EULs, or voice interconnect circuits, to maximise the utilisation of the Transport Link.

The processes for supporting this will be developed and agreed with the industry process groups.

ANNEX D SECTION 8

TYPICAL DELIVERY OF AN END USER LINK



It is expected that the EUL pricing structure will broadly follow the current retail leased line pricing structure, and will reflect the reduced number of elements used.

¹ The option for an OLO to specify an existing Interconnect Link provided under service schedule 101 of the RIO will be available when the product development required to facilitate the transmission of both PPC and voice interconnect circuits over these Interconnect Links is complete.

² The appropriate exchange may be:

- (a) An eircom Interconnect Node serving an existing ISI Interconnect Link;
- (b) An Annex A exchange where the OLO's PoP may be served by more than one Annex A exchange;
- (c) The local Annex A exchange; or
- (d) The Annex A exchange as agreed between the parties.

³ It is agreed that two notification processes may be required, one for additions to Annex A, and one for deletions.

⁴ It is agreed that two notification processes may be required, one for additions to Annex A, and one for deletions.

⁵ The definition of an applicable circuit will be discussed with industry and included in Annex A of the RIO.