



open eir¹
Product Description
Unbundled Local Metallic Path
(ULMP)

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Version Control

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This document follows change control procedure:

Proposed is defined as a document status when the approved document is uploaded to Proposals Section of open eir Website.

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For information:

- Historical Document History Table located at end of Document.
- Publish means the action of uploading a document to the website regardless of status or location.
- **If there are changes to the document between 'Proposed' and 'Final', change control operates.**



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1 Introduction

This document defines the industry agreed Product Description for an Unbundled Local Metallic Path (ULMP).

2 Product Description

An 'Unbundled Local Metallic Path' (ULMP) is an in-situ two wire metallic path connection between the Operator's (AS) block on the exchange side of the Main Distribution Frame (MDF) and the Network Termination Unit (NTU), or Network Terminating Point where no NTU exists, in the customer's premises or the build of a new path, the cost of which will not exceed the limit set out below

- An in-situ metallic path refers to those:
- Paths where existing PSTN/ISDN BRA service is being provided,
- Paths that are fully stabilised between the MDF and the NTU/NTP,
- Spare paths which exist between the MDF and the NTU/NTP in the customer's premises where available, and which following a site survey, can be completed by jumpers, by a drop wire or by jumpering at the street cabinet level.

A new metallic path is a path that can be completed by way of new build to a value not exceeding €7000.

The points of demarcation are the Operator's block on the exchange side of the MDF and the customer facing side of the NTU/NTP.

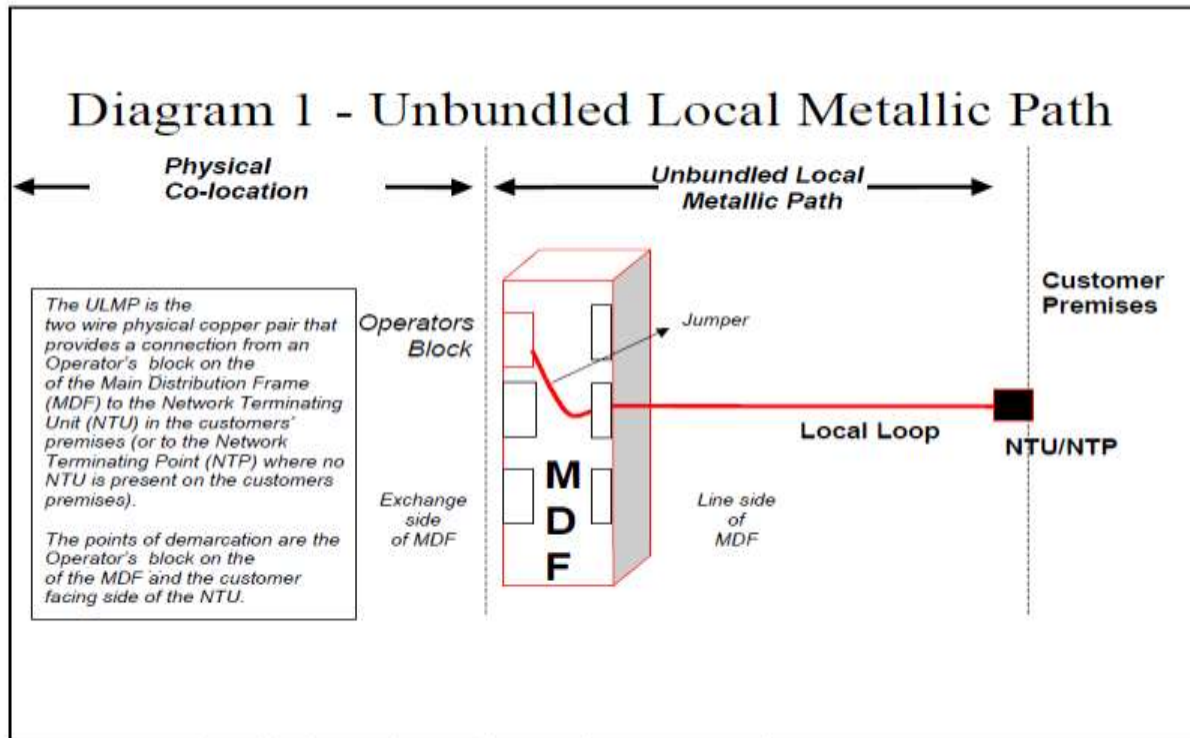


Figure 1: Unbundled Local Metallic Path - Network Diagram

2.1 Figure 1: Unbundled Local Metallic Path

3 Product Components

3.1 Product Components

The Operator will have access to the Unbundled Local Metallic Path facilities at their dedicated block on the exchange side of the MDF. This MDF block will be provided by the Operator according to open air specifications, and will be installed on the MDF by open air. The Operator will identify on this block, the exchange side, the line side and the pair numbers. The provision of a jumper between the line side of the MDF and the Operator's block on the exchange side of the MDF will be provided by open air. The provision of a tie cable between the Operator's block on the exchange side of the MDF and their physical co-location space is detailed in the Technical Manual for Physical Co-location.

3.2 Metallic Path

The local metallic path is a two wire physical copper pair that provides a connection from the Main Distribution Frame (MDF) to the Network Terminating Unit (NTU) in the customers' premises, or to the Network Terminating Point (NTP), where no NTU is present on the customer's premises

3.3 Customers Premises

The customers' side of the Network Termination Unit (NTU) or Network Termination Point (NTP) is the final point of open eir responsibility for the unbundled Local Metallic Path.

At the customers' premises the Operator will access the Unbundled Local Metallic Path via open eir's standard Network Termination Unit (NTU) (or Network Terminating Point (NTP) where no NTU is present). Where NTU equipment may need to be installed where no identifiable demarcation exists, open eir would provide the Operator with a standardised Network Terminating Unit (NTU) by agreement to be installed and tested by the Operator subject to agreed installation standards. The specifications of the NTU/NTP are attached in Appendix 3.

Provision, installation, replacement and maintenance of any additional equipment/connections on the customer's side of the NTU/NTP required to provide the Operator's own services to the end user(s) will be the responsibility of the Operator.

4 Product Technical Information

The parameters for the MDF interface are detailed in Appendix 1.

The parameters of the Metallic Path are detailed in Appendix 2.

The parameters for the NTU interface are detailed in Appendix 3.

4.1 Spectrum Management

The provision of Unbundled Local Metallic Paths to an Operator will be dependent upon adherence to a Copper Loop Frequency Management Plan agreed under the ODR Definitions Industry Subgroup.

5 Product Availability

The metallic paths available for unbundling are defined in the product description in section 2.

Suitability of available metallic paths will be dependent upon individual surveys. The reason(s) for a "failed" survey will be provided to the respective Operator.

6 Universal Account Number and Circuit Reference Number

The LLU service will require the use of a Universal Account Number (UAN) and a Circuit Reference Number (CRN).

As part of the open eir to Operator order process open eir will supply the UAN as part of the ULMP completion notification.

The Operator must ensure that the UAN and CRN are included on all Operator bills issued to the customer. Upon end customer request, the UAN and CRN will be communicated to the customer within 2 working days.

7 Services Responsibilities

The first point of contact for an end customer of an Unbundled Local Metallic Path will be the Operator service provider. The Operator must have the capability to localise any faults and pass to *open eir* for repair, faults localised to the *open eir* Unbundled Local Metallic Path.

.....open eir will have responsibility for the provision, repair and maintenance of the Unbundled Local Metallic Path. A Service Level Agreement (SLA) within the terms of contract between open eir and the Operator service provider in relation to the process of provision, repair and maintenance is attached in Annex E, Section B of the Access Agreement.

8 Service Management

Service management parameters, targets, procedures and processes for Unbundled Local Metallic Paths are detailed in the Inter Operator “Process Manual for the open eir services Unbundled Local Metallic Path and Line Sharing”.

In addition, the Operator shall be obliged to comply with the “open eir Unified Gateway, Interface Guidelines.” This document shall be contractually binding and the controlling version is latest version published on the open eir website which shall be notified to Operators

8.1 Ordering

The interface between the Operator and open eir for the submission of orders will be as outlined in the Inter Operator “Process Manual for the open eir services Unbundled Local Metallic Path and Line Sharing”.

8.2 Service Provisioning

Processes for service provisioning will be as outlined in the Inter Operator “Process Manual for the open eir services Unbundled Local Metallic Path and Line Sharing”.

8.3 Network Repair and Maintenance

Processes for network operation and maintenance will be as outlined in the Inter Operator “Process Manual for the open eir services Unbundled Local Metallic Path and Line Sharing”.

8.4 Fault Repair

Processes for fault repair will be as outlined in the Inter Operator “Process Manual for the open eir services Unbundled Local Metallic Path and Line Sharing”.

8.5 Service Levels

Specific service levels will be as outlined in the Inter Operator “Process Manual for the open eir services Unbundled Local Metallic Path and Line Sharing”.

Appendix 1: Parameters of the Main Distribution Frame

The following blocks are currently being used in the termination of cables in MDFs. The MDF block specification for a particular exchange will be provided as part of a Site Offer.

Insulation Displacement Types

- Jacks Test 200/D –Line Side
- Jacks Test 512/D- Exchange Side
- Jacks Test 240/D – exchange side Multiplex Equipment

QM Types

- QM 2000 Blocks (left & right) 104pr –Line Side
- QM System equip block 128pr – Exchange Side

Quante ID 3000

To be inserted once available.

Ericsson Mini MDF

Exceptional item where required.

The block to be used will depend on the MDF. These will be updated as required.

- open eir will advise the Operator of the appropriate block for each MDF.

The Technical Manual for Physical Co-location outlines more detailed parameters.

Appendix 2: Parameters of the Metallic Path

The standards have been in place since 1995 and are updated as and when needed. The relevant Operator will be advised of any changes to the parameters as required.

Summary of Transmission and Signalling Standards

The standard circuit for connection of a customer's terminal to the network is an unloaded cable pair

However loop treatment devices are used in special cases where there is a shortage of copper pairs.

Transmission Limit:

The maximum recommended attenuation for the customer's line is 10 dB at a frequency of 1020Hz.

Signalling Limit:

The recommended loop resistance for the customer's line is 1200 Ohms.

The cable gauge chosen should be the smallest which meets the above limits. Cables of lower gauge should be used close to the exchange and the gauge increased with distance from the exchange. A cable should only be jointed to the next largest (or smallest) cable gauge.

Local Network Standards

A standard, dedicated copper pair (2 wire) should be used if possible.

However, the following line treatment devices may be used:

- Signalling loop extenders
- Line amplifiers
- Subscriber carrier systems.

Signalling and Feeding Limits

These limits are determined by the DC current required by the telephone receiver and the customer's home section in the exchange.

The telephone instrument needs a current of 20mA. Parent exchange signalling normally needs 16 mA. Hence the instrument is the limiting factor.

The resistance limit is:

$$R = \frac{(V_s.)}{I_{min}} - (R_f. + R_i)$$

Where

R = permitted loop resistance

Vs. = exchange feed voltage

Imin = minimum feed current

Rf. = total feed resistance

Ri. = instrument resistance

Modern electronic instruments have a higher resistance (up to 400 Ohms) than older types.

$$R = \frac{(48)}{0.02} - (800+400)$$

$$R = 1200 \text{ Ohms}$$

A maximum value of 1200 ohms is allowed.

Note: Rf. for digital exchanges is 800 Ohms.

Physical Parameters

Line Insulation

At installation

The line, including the internal wiring and master socket with no telephone connected to it, shall have minimum leakage resistances measured at 100V DC, as follows:

- 10MOhms A leg to earth and B leg to earth,
- 10MOhms between line terminals (A & B).



.....The line, including the internal wiring, but excluding the master socket and with no telephone connected to it, shall have minimum leakage resistances as follows:

- 50MOhms A leg to earth and B leg to earth,
- 50MOhms between line terminals (A & B).

Air spaced cables, tested with an Ohmmeter on the 500V range, and shall have a minimum-leakage resistance of 500MOhms between cable pairs and moisture barrier.

For operation and maintenance

The line, including the internal wiring and the master socket with the telephone connected to it, shall have minimum leakage resistances as follows:

- 1MOhms A leg to earth and B leg to earth.
- 1MOhms between the A leg and the exchange battery and between the B leg and the exchange battery. (Alternatively, the voltage across a 20kOhm resistor connected between the A or B leg and the battery shall not exceed 0.5V).
- 500kOhms A leg to B leg. Maximum Loop Resistance

Maximum loop resistance

The maximum loop resistance shall be 1,200Ohms.

Jacks Modular Resistance

The resistor in the master socket should be 470kOhms.

Attenuation Distortion

The attenuation distortion of a connection, relative to 800Hz, shall conform to ITU-T Recommendation M1040. Distortion shall be within the limits shown in Figure 1.

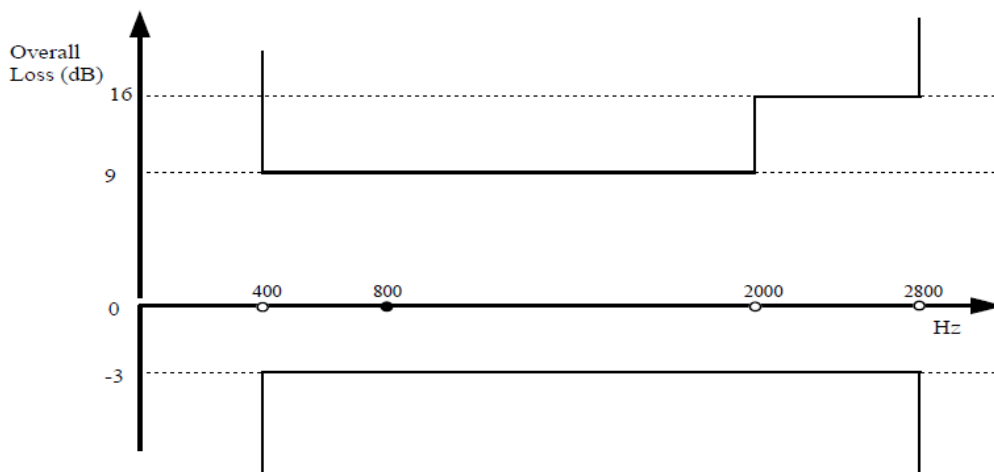


Figure 2: Limits for the overall loss of the circuit relative to that at 800Hz



Data Speed

No data rate is guaranteed on a telephony connection.

Random Noise

Random noise shall not exceed 50dBmOp.

Impulse Noise

Immunity from impulse noise is not guaranteed. While it should not significantly impair speech transmission, it may affect data transmission.

Maximum Transmission Level

The subscriber's equipment shall not transmit at levels exceeding -5dbm for PSTN

Version Control History

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1.1			09/08/2011
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V2.0	Final	This document is based on V1.1 Implementation of Standardised Change Control.	07/06/2017