

Reference Interconnect Offer

ELTRONA INTERDIFFUSION SA

2017

RIO – Eltrona 2017

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1. Introduction

1.1. Scope

This Reference Interconnect Offer (RIO) defines the interconnection terms and conditions (including the list of the interconnection services) which Eltrona will apply to all Operators in order to allow end-users who are connected to the system of an Operator to communicate with end-users who are connected to the telecommunication networks of Eltrona. This RIO focuses mainly on voice services and does not include other services.

1.2. Services covered

The services covered by this RIO are exclusively terminating access service.

1.3. Terms and conditions

This RIO defines the minimal interconnection terms and conditions which Eltrona will grant to other Operators. Nevertheless, Eltrona reserves the right to provide more beneficial terms and conditions, in accordance with the applicable regulatory framework, including the principle of non-discrimination.

1.4. Responsibility of content

No Operator shall be responsible for the content of calls passed through his own or an interconnected Operator's network. Laws and regulations regarding confidentiality and access by legal authorities to calls on the Operator's and Eltrona's network will apply.

1.5. Validity

RIO comes into effect upon the conclusion of consultation process in accordance with article 3.4 of the Regulation 14/177/ILR of 28th August 2014.

1.6. Reviews and Amendments

The content of this RIO may be reviewed and amended in order to comply with applicable rules and regulations. Furthermore, the ILR reserves the right to request or impose on Eltrona modifications to the RIO or the adoption of a new RIO to be undertaken by Eltrona.

1.7. Applicable Law

Unless defined otherwise, the terms used in this RIO must be interpreted in accordance with the Law of 27th February 2011 on Networks and Electronic Communication Services (the "Law") and its implementing regulations.

1.8. Prices

All prices mentioned in this RIO, including those specified in the Appendices attached hereto, are in EURO (€) and exclusive of Value-Added Tax (VAT) or any other legal taxes, which will be added where applicable.

2. Definitions

2.1. Call

The establishment of a connection through a telecommunications network and the transmission and the delivery of a signal from the terminal on which this signal was generated to the terminal to which this signal is addressed or to a network platform or any other facility giving an automatic answer in those cases where the connection cannot be established.

2.2. Calling Line Identification (CLI)

The CLI is the number of the calling user conveyed by each Operator's network for each call, it may also be provided by the network or partly by the calling user.

2.3. Calling Line Identification Presentation (CLIP)

Supplementary service provided for in ITU-T Recommendation I.251.3.

2.4. Calling Line Identification Restriction (CLIR)

Supplementary service provided for in ITU-T Recommendation I.251.4.

2.5. Capacity of the Interconnection Link

The capacity defined for the Interconnection Link and the corresponding LOL access point to which the Operator wishes to be connected.

2.6. Eltrona

Eltrona Interdiffusion SA – 4-8 rue de l'aciérie – 1112 Luxembourg.

2.7. Eltrona Access Point

The physical interface within Eltrona's System from which the Interconnection Services can be obtained.

2.8. ILR

Institut Luxembourgeois de Régulation.

2.9. Interconnection

The interconnection with Eltrona, as defined in the Law.

2.10. Interconnect Agreement

An agreement between Eltrona and an Operator, which defines the conditions for the Interconnection.

2.11. Interconnection Link

A Link between a Eltrona Access Point and an Operator Access Point for the provision of Interconnection traffic.

2.12. Interconnection Service

Services described in the present Reference Interconnect Offer.

2.13. International Public Telecommunication Number

Defined as in ITU-T Recommendation E.164.

2.14. IP

Internet Protocol version 4 (RFC 791).

2.15. IXP

Internet Exchange Point.

2.16. KPI

Key Performance Indicator.

2.17. Link

Set of telecommunications facilities necessary to establish one or more transmission paths between two locations.

2.18. National (Significant) Number

Defined as in ITU-T Recommendation E.164.

2.19. Number portability

The case where a subscriber retains its originally assigned directory number when changing from one network Operator (donor network; Donor Operator) to another (recipient network; Recipient Operator) and is not related to changing the nature of service nor the location.

2.20. Operator

Any legal or natural person exploiting telecommunications networks and/or providing telecommunications services in Luxembourg.

2.21. Parties

Eltrona and the Operator which an Interconnection Agreement is (being) concluded with.

2.22. Point of Interconnection (POI)

The physical point on the Interconnection Link where the telecommunications network of LOL and the Operator's System are interconnected. The POI is the boundary between LOL and the Operator domains of responsibility.

2.23. Reference Interconnect Offer (RIO)

The present offer for Interconnection Services.

2.24. System

All equipment and software which, an Operator uses to provide his telecommunications services.

2.25. SLA

Service Level Agreement.

3. Interconnection Architecture

3.1. Eltrona sited IP-Core Interconnection

Eltrona has one (1) site that has been designed for use as IP-Core Interconnection Access Point of its optimal network integration. This is an existing Eltrona site, containing relevant IP switching, routing and equipment.

Eltrona IP-Core Interconnection point addresses:

Boulevard Docteur Ernest Feltgen, 1515 Luxembourg

3.2. System Alteration

If Eltrona wishes to make a system alteration, it shall give the Operator and the ILR no less than 6 months written notice prior to the date of the anticipated system alteration. The notice shall specify the technical details of the system alteration and the date of the anticipated system alteration. Following such notification Eltrona shall supply to the Operator such information as the Operator may reasonably request including, to the extent reasonably practicable, the potential impact on the service provided by the Operator to the End Users.

3.3. Standards

Where relevant for interconnection with Eltrona, the following hierarchy of standards and procedures will apply:

- Any legal requirements
- ETSI standards
- ITU-T Recommendations
- National standards
- Any other international standards

The SIP protocol is used as defined in RFC 3261 (<http://rfc.net/rfc3261.html>) to convey and terminate voice calls. The interconnection between both infrastructures is done through the Internet unless otherwise agreed upon between parties. Each party will be responsible for the Internet access charges paid to its Internet service provider.

4. Terminating access service

4.1. Scope

The terminating access service conveys a call handed over from the Operator's System at a Eltrona's Access Point for termination on any national number of Eltrona's network. Tariffs may be different for different categories of services identified by different number ranges.

4.2. Tariffs

The tariffs applied by Eltrona for the provision of the terminating access service are indicated in Annex 1. Only calls that have been setup successfully and answered will be charged. The charging time starts with the answering signal and ends with the first clear signal generated either by the calling or the called party.

4.3. CLI

Whenever CLI is transferred to the telecommunications network of Eltrona, Eltrona will not communicate such CLI to an end-user if such CLI is marked as CLIR unless the call is directed to an emergency number.

5. Interconnection Link Services

The interconnection link service consists in the physical linking between a Eltrona Access Point and an Operator Access Point.

The Operator must interconnect to a Eltrona Point of Interconnection as defined in paragraphs 3.1. The charges per interconnect site are defined in Annex 2.

5.1. Interconnection Link and Co-Location

For Eltrona sited interconnection, Eltrona can provide a custom offer for an Interconnection Link Service or the Operator will supply and operate an Interconnection Link in its entirety.

Eltrona will provide access to the Operator at its site for the installation and maintenance of the Operator's transmission equipment located at this site. Eltrona will supply a suitable location for the Operator's transmission equipment used in direct relation with interconnect services, electric power and safekeeping.

In its request for Eltrona sited interconnection, the Operator will describe his needs regarding the installation of his transmission equipment on the premises of LOL. Whenever Eltrona determines that Eltrona sited interconnection is not reasonably feasible, it will inform the Operator and the ILR of the reasons of such unfeasibility within 15 days of receiving the request. Eltrona will comply, should the ILR find that Eltrona sited interconnection is reasonably feasible. In case of non-feasibility of Eltrona sited interconnection, Eltrona will cooperate with the Operator in order to find an appropriate alternative solution.

For the provision of the co-location facilities, the conditions and prices are subject to a separate offer.

5.2. Interconnection Capacity

The Operator is responsible for the dimensioning of the Interconnection Links capacity required for the conveyance of its own traffic. An Operator's own traffic consists in the traffic for which the Operator is billed by Eltrona.

An IP Trunk Group contains the dedicated bandwidth expressed in a number of concurrent Calls. An IP Trunk Group is used for the handling of traffic of one or more Services. The possible combinations of Services in IP Trunk Groups are to be agreed between the parties.

5.3. IP Interconnection

The signaling systems between Eltrona and the Operator shall be based on the IETF SIP protocol. At the transmission levels, the interconnection is based on IP Networks.

6. Number Portability (NP)

6.1. Scope

Number portability (NP) is applicable under the conditions defined by the document DOCNP-ILT which describes the procedures applicable to number portability in Luxembourg (the NP-Document).

As defined by the NP-Document, the Recipient Operator transmits the electronic file containing the requested data to Eltrona by means of an electronic messaging system. The transmission of the electronic files can be operated between 6.00 and 18.00 hours from Monday to Friday, except legal and public holidays. Eltrona will acknowledge receipt of the transmission file by means of the same electronic messaging system.

NP will be activated by the Eltrona from Monday to Friday from 8.00 to 12.00 and 13.00 to 17.00 hours except legal and public holidays in Luxembourg. This time schedule may be extended to 7.00 to 19.00 hours on Monday to Friday and 8.00 to 12.00 hours on Saturday with the supplementary costs to be paid by the Recipient Operator.

6.2. Tariffs and Billing

Tariffs of number portability will be those defined in Annex 3.

Billing procedures will be as described in the Porting Agreement between the Parties.

7. Quality of service of Eltrona's Interconnection Services

As far as the terminating access service is concerned, Eltrona undertakes to ensure for its own System a network failure rate, which is in line with the commonly accepted industry standards regarding QoS, for failures which are exclusively due to its System. Network failure rate is the ratio between the number of calls handed over by an Operator to be terminated on Eltrona's Network and failed due to insufficiencies in Eltrona Network and the total amount of calls handed over by that Operator to be terminated on Eltrona's network (excluding, in particular, failures due to end-user behavior and failure of terminal equipment).

In the event of disturbance of the conveyance of traffic within its System, Eltrona may be constrained to implement the classical measures of traffic regulation (call gapping, etc. ...) in order to limit its effect on the quality of the service provided to its customers as well as to the Interconnected Operators. These measures of traffic regulation are applied to Eltrona and Operator traffic without discrimination. The target figures given above for network failure rate do not include failures that are caused by the mentioned measures of traffic regulation. The Operator and the ILR shall be informed if the above-mentioned measures for traffic regulation have to be applied and how long they may last.

8. Procedure for Reaching an Interconnection Agreement

Interconnection agreements shall be negotiated and reached according to the general modalities for interconnection as determined by the ILR (Article 23 of the Law).

Eltrona may demand the delivery of a bank guarantee on first demand of a Luxembourg based bank of 75.000,- € in favor of Eltrona for the provisioning of the interconnect service. When, and as long as there exist serious and ascertained doubts regarding a client's solvency, the Company may without prejudice to previous arrangements demand payment in advance.

Requests for interconnection services shall be made in writing to the following address:

Eltrona Interdiffusion SA
4-8 Rue de l'aciérie
1112 Luxembourg
Luxembourg

9. Annexes 1 to 4

All prices mentioned here after are given exclusive of VAT or any other legal taxes, which will be added where applicable.

10. Annex 1 – Tariffs applicable to the terminating access service

10.1. Terminating access service to geographic numbers

From 01/01/2017 to 31/12/2017

	Call Setup €ct	Charge per minute ¹ €ct
Peak ²	0,00	0,131
Off-Peak ³	0,00	0,131

From 01/01/2018 to 31/12/2018

	Call Setup €ct	Charge per minute ⁴ €ct
Peak ⁵	0,00	0,135
Off-Peak ⁶	0,00	0,135

From 01/01/2019 to 31/12/2019

	Call Setup €ct	Charge per minute ⁷ €ct
Peak ⁸	0,00	0,138
Off-Peak ⁹	0,00	0,138

Tariffs and billing arrangements for terminating access service to numbers not determined in the present RIO may vary according to the technical implementation chosen for the interconnection. In any circumstance, the tariffs will be cost based and non-discriminatory.

¹ To be billed on a per nearest second basis

² Peak: worked days (jours ouvrables) between 8.00 and 19.00

³ Off-peak: time outside Peak

⁴ To be billed on a per nearest second basis

⁵ Peak: worked days (jours ouvrables) between 8.00 and 19.00

⁶ Off-peak: time outside Peak

⁷ To be billed on a per nearest second basis

⁸ Peak: worked days (jours ouvrables) between 8.00 and 19.00 ⁹

Off-peak: time outside Peak

11. Annex 2 – Tariffs applicable to the interconnection link service

11.1. IP Interconnection

One-off charge per Operator (covering installation and testing):

- 4000€

Annual fee per Ethernet Interface (annual costs for the access point equipment and maintenance):

- Copper interface 100 Mb/s: 500€
- Copper interface 1 Gb/s: 1500€
- Fiber-optic interface 1 Gb/s: 2000€

Monthly charge per used Interconnect Site (covering billing, maintenance and service quality control):

- IP-Core Interconnection Access Point: 350€
- IXP Interconnection Access Point – Public VLAN (ID 2000): 250€

For the provision of co-location facilities, when required, the conditions and prices are subject to a separate offer.

11.2. Modification of Interconnection Links

The establishment, the modification and the cancellation of trunks, as well as the connection or disconnection of circuits or signaling links required by an Operator, are charged to this Operator if these changes apply to existing interconnect trunks.

The necessary changes related to the extension on an existing interconnect trunk by adding supplementary interconnect links are not charges to the operator.

Establishment of a new trunk:

- IP: 850€

Modification or cancellation of an existing trunk:

- IP: 450€

12. Annex 3 – Tariffs for Number Portability (NP)

12.1. Tariff and pricing

Standard tariffs applicable to Number Portability

Activation fee for number portability per number activation:

- 14,38€

12.2. Routing of ported numbers and routing errors

Additional conveyance fee per minute for inconsistent or erroneous codes if the volume of inconsistent or erroneous codes exceeds the percentage of 1% of the total calls to ported numbers:

□ 0,63€ct