

---

Reference Interconnect Offer (RIO)

TK TEL-RIO-01.00

---

TELKEA TELECOM S.A.

1, rue de Bitbourg

L-1273 Luxembourg (Luxembourg)

Registered N° B 63935

VAT N°: 1998 2207 110 – VAT N° Intracom : LU 17533909

---

Version 01.00

14th June 2017

Issued in accordance with the ILR regulation 16/208/ILR and 14/177/ILR

---

## Table of contents

---

1. Scope and limits of the Interconnect offer
2. Offer validity
3. Definitions
4. Interconnection Architecture
  - 4.1. Sites
  - 4.2. System Alteration
  - 4.3. Standards
5. Service description: Terminating access services
6. Interconnection Link Services
  - 6.1. General
  - 6.2. Co-location and Interconnection link
  - 6.3. Capacity
  - 6.4. Signalling
7. Quality of Service for Interconnection services
8. Procedure for reaching an interconnection agreement
9. Annexes
  - Annex 1 - Fix terminating fees
  - Annex 2 - Fees for Interconnection link service

---

## 1. Scope and limits of the Interconnection Offer

---

TELKEA TELECOM has its own range of telephone numbers and uses the termination services as well as the number porting from MixVOIP.

Please find hereafter the reference offer.

This Reference Interconnect Offer (RIO) deals with Interconnect Services offered to a duly authorized Public Network Operator, hereafter called “Interconnected Operator”, for termination of fix voice calls to the “network of MIXvoip”, hereafter called “MIXvoip”.

This Reference Interconnect Offer has been issued and developed in accordance with the obligations imposed on MIXvoip in the ILR decision 16/208/ILR, market 1/2014 dated 28th November 2016 as well as ILR decision 15/191/ILR dated March 20th 2015.

The Interconnect Services included in this Reference Interconnect Offer encompass the following services:

- Terminating Access Services, as described in section 5;
- Interconnect Link Services, as described in section 6;

This Reference Interconnect Offer does not cover calls to numbers which were initially attributed to MIXvoip but which were ported to other networks. Other interconnect services may be negotiated between MIXvoip and the “Interconnected Operator” and included in the final Contract “Interconnect Agreement”.

As a general principle, MIXvoip is not responsible for the content of the communications conveyed through its Interconnect Services.

---

## 2. Offer validity

---

This RIO is valid from 1st January 2017, unless

- a new Reference Interconnect Offer is published by MIXvoip,
- a material change occurs in the laws of regulations, governing telecommunications in Luxembourg.

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 MIXvoip modifications to the Offer.

The validity of the present Reference interconnect offer is determined by the decision 14/177/ILR dealing with the procedures related to the publication of a reference offer dated 28 august 2014 and 16/209/ILR, market 1/2014 dated 28 November 2016, as well as ILR decision 15/191/ILR dated March 20th 2015.

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

---

## 3. Definitions

---

**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.

**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. This information is flagged either as "network - provided" or as "user provided, verified and passed". If the verification of a user provided CLI fails, the network provided CLI will be transmitted.

**Calling Line Identification Presentation (CLIP):** Supplementary service provided for in ITU T Recommendation I.251.3.

**Calling Line Identification Restriction (CLIR):** Supplementary service provided for in ITU T Recommendation I.251.4.

**Capacity of the Interconnection Link:** The capacity defined for the Interconnection Link and the corresponding Operator access point to which the Interconnected Operator wishes to be connected

**ILR:** Institut Luxembourgeois de Régulation.

**Interconnection Link:** A Link between "The Operator's" Access Point and the "Interconnected Operator"

**Operator Access point:** The physical interface within the Operator's System from which the Interconnection services can be obtained.

**MIXvoip or "The Operator":** The operator offering interconnect services through this offer

**Interconnected operator:** An operator wishing to be or being interconnected to "The Operator"

**International Public Telecommunication Number:** Defined as in ITU T Recommendation E.164.

**National (significant) Number:** Defined as in ITU T Recommendation E.164.

**KPI:** Key Performance Indicator

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



**Parties:** "The operator", offering interconnection services and the "Interconnected Operator" buying interconnection services under this agreement.

**Point of Interconnection (POI):** The physical point on the Interconnection Link where the telecommunications network of "The Operator" and the "Interconnected Operator's" System are interconnected. The POI is the boundary between "The Operator" and the "Interconnected Operator domains of responsibility"

**Reference Interconnect Offer (RIO):** The present offer for interconnection Services

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

**SLA:** Service Level Agreement

---

## 4. Interconnection Architecture

---

**4.1. - Sites:** MIXvoip offers following sites that have been designed for use as Interconnection Access Points grounds of their optimal network integration.

Interconnection point addresses:

LuxConnect  
4, rue A. Graham Bell  
L-3235 Bettembourg

**4.2. - System alteration:** If MIXvoip wishes to make a system alteration, it shall give the “Interconnected 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 MIXvoip shall supply to the connected Operators such information as the “Interconnected Operator” may reasonably request including, to the extent reasonably practicable, the potential impact on the service provided by the “Interconnected Operator” to the End Users.

**4.3. - Standards:** Where relevant, the following standards and procedures will apply:

- Any legal requirements
- ITU-Recommandations
- ETSI standards
- Any other relevant international standards

The signalling system will be based on the ITU-T SS7 protocols, ISUP Blue Book version. Tests for the SS7 will be performed following the pertinent ITU-T recommendations.

The transmission level of the Interconnection is based on the pertinent ITU-T recommendations for PDH and SDH interfaces.

Other Interconnection options may be provided, and MIXvoip try to comply with any reasonable request for alternative Interconnections, if technically feasible.

---

## 5. Service Description: Terminating Access Service

---

The fix terminating access service conveys a call handed over from the “Interconnected Operator’s” System, at MIXvoip’s Access Point for termination on any fix number of MIXvoip’s network. Tariffs may be different for different categories of services identified by different fix number ranges.

The tariffs applied by MIXvoip 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.

Whenever CLI is transferred to the telecommunications network of “The Interconnected Operator”, MIXvoip 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.



---

## 6. Interconnection Link Service

---

**6.1. General:** The interconnection link service consists in the physical linking between MIXvoip's Access Point and an "Interconnected Operator" Access Point. The "Interconnected Operator" must interconnect to a Point of Interconnection defined in paragraph 4.1.. The relevant charges per interconnect site are defined in Annex 2.

The "Interconnected Operator" is responsible for the dimensioning and payment of the interconnection links required for the conveyance of its own traffic. The "Interconnected Operator" is responsible for the traffic conveyed through its System and handed over at MIXvoip's Access Point in order to use MIXvoip's terminating fix access services.

- Initial Capacity Order: The initial capacity order must be submitted at the latest 3 months before the launch date of the service. MIXvoip will aim to keep shorter delays taking into consideration its availability and organizational constraints.

- Subsequent Capacity Orders: Any subsequent capacity order has to be submitted at the latest 2 months before the launch date of the additional traffic. MIXvoip will aim to keep shorter delays taking into consideration its availability and organizational constraints.

**6.2. Co-location & Interconnection link:** For MIXvoip-sited interconnection, MIXvoip can provide a custom offer for an Interconnection Link Service or the Operator will supply and operate an Interconnection Link in its entirety.

MIXvoip will provide access to the "Interconnected Operator" at its site for the installation and maintenance of "The Interconnected Operator's" transmission equipment located at this site. MIXvoip will supply a suitable location for the "Interconnected Operator's" transmission equipment used in direct relation with interconnect services, electric power and safekeeping. In its request for MIXvoip sited interconnection, the "Interconnected Operator" will describe his needs regarding the installation of his transmission equipment on the premises of MIXvoip. Whenever MIXvoip determines that MIXvoip sited interconnection is not reasonably feasible, it will inform the "Interconnected Operator" and the ILR of the reasons of such unfeasibility within 15 days of receiving the request. MIXvoip will comply, should the ILR



find that “The Operator”-sited interconnection is reasonably feasible. In any case, MIXvoip will cooperate with the “Interconnected Operator” in order to find an appropriate alternative solution.

**6.3. Capacity:** “The Interconnected operator” is solely responsible for the dimensioning of the Interconnection links.

**6.4 Signalling System:** The signalling system between “The interconnected Operator” and MIXvoip is specified below.

**Other interconnection options.** Other Interconnection options may be provided and MIXvoip will try to comply with any reasonable request for alternative Interconnection, if technically feasible.

---

## 7. QoS for Interconnection Services

---

As far as the terminating access service is concerned, MIXvoip undertakes to ensure for its own System a network failure rate, which does not exceed 1, 5% as a national 3 months average, for failures which are exclusively due to its System. Network failure rate is the ratio between the number of calls handed over by an “Interconnected Operator” to be terminated on MIXvoip’s Network and failed due to insufficiencies in MIXvoip’s Network and the total amount of calls handed over by “The Interconnected Operator” to be terminated on MIXvoip’s network (excluding, in particular, failures due to end-user behaviour and failure of terminal equipment).

In the event of disturbance of the conveyance of traffic within its System, MIXvoip may be constrained to implement the classical measures of traffic regulation (limiting channels, etc.) in order to limit its effect on the quality of the service provided to its customers as well as to the “Interconnected Operator”.

The target figures given above for network failure rate do not include failures that are caused by the mentioned Measures of traffic regulation.

“The Interconnected 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.

MIXvoip shall respect the quality conditions as they are defined in the applicable legal regulation and in accordance with the quality MIXvoip provides for its retail clients.

---

## 8. Procedures for reaching an interconnection agreement

---

Interconnection agreements shall be negotiated according to the procedures and regulations determined by ILR.

On first demand by the “Interconnected operator”, MIXvoip may request bank guarantees of 10.000€ (of a bank based in Luxembourg) for the provisioning of the interconnect service.

Other “reasonable” guarantees, as payment in advance, may be requested before provisioning of the interconnection service.

Agreement requests shall be addressed to:

MIXvoip S.A..  
70 rue des Prés  
L-7333 STEINSEL  
info@mixvoip.com

---

## 9. Annexes

---

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

### **Annex A - Terminating rates for national interconnection**

Terminating access service to MIXvoip's fix numbers

Charge per minute (in €ct excl. VAT)

0.131 eurocent/min for 1st January 2017 – 31 December 2017 as defined by ILR

0.135 eurocent/min for 1st January 2018 – 31 December 2018 as defined by ILR

0.138 eurocent/min for 1st January 2019 – 31 December 2019 as defined by ILR

### **Annex B - Fees for Interconnection link service**

Annual fee per 2Mbit's link covering equipment and maintenance	1.713,-€
One-Off charge per Operator Covering installation and testing	8.149,-€