

Reference Interconnect Offer

Equant Network Systems Ltd. (Orange Business Services)

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Description of any associated contractual or other terms and conditions for access

Prices and charges applicable as of August 1, 2019 : see Annex 1 for Interconnect Prices and Annex 2 for Tariffs applicable to the interconnection link service.

Description of the technical specifications and network characteristics

Interconnection Architecture

National Interconnection Sites

Equant Network Systems has 2 sites that have been designed for use as National Interconnection Access Points for wholesale VoIP services. The addresses of the interconnection points are:

Equant C/O Esat Block 8, Harcourt Centre, Charlotte Way, Dublin, Ireland (DUBX01)
This is an existing unmanned Equant Network Systems' site, containing relevant switching and transmission equipment with all digital functionality for national and international traffic.

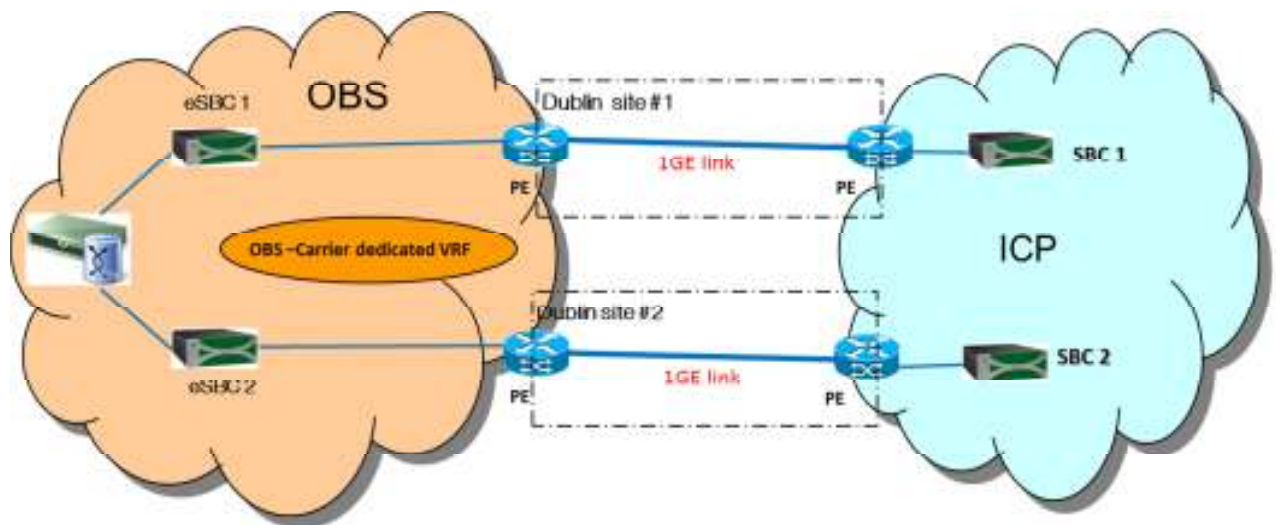
7/8 Harcourt St c/o Data Electronics ,Dublin, Ireland (DUBT03)
This is an existing unmanned Equant Network Systems' site, containing relevant switching and transmission equipment with all digital functionality for national and international traffic.

In case of national interconnection, the offered Interconnect Services relate to the entire national area.

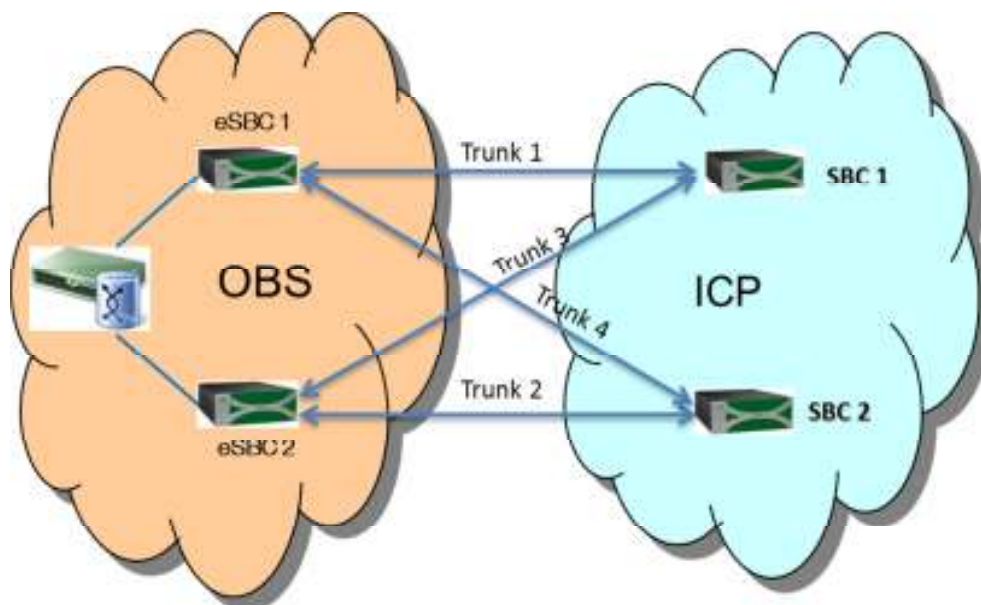
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IP connectivity design:



Voice connectivity level:



Main technical requirements:

- Codec G.711 A law with p-time of 20 ms is recommended
- G.729 with or without annex A and p-time of 20 ms is also available
- Transport protocol IPv4/UDP/RTP for Media
- CLI presentation guaranteed, CLI identity will to be accepted in the INVITE (P-Asserted Identity)
- Fax support : preferably T38, G.711 pass-through available

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Regional Interconnection Sites

Equant Network Systems has **no** site that has been designated for use as Regional Interconnection Access.

System Alteration

If Equant Network Systems wishes to make a system alteration, it shall give the OAO and ComReg 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 Equant Network Systems shall supply to the OAO such information as the OAO may reasonably request including, to the extent reasonably practicable, the potential impact on the service provided by the OAO to the End Users.

Standards

The signaling system will be based on the SIP protocol. Detailed technical setup and testing procedure will be agreed between operators. The transmission level of the interconnection is based on Ethernet interfaces.

Interconnection Link Services

The interconnection link service consists of the physical link between an Equant Network Systems' Access Point and an Operator Access Point. The Interconnection Link provided by Operator is Ethernet (optical / metallic interface) based line.

Equant Network Systems ensures the availability of only the following Interconnection Link Service for the conveyance of the Operator's traffic:

Equant Network Systems sited interconnection

Equant Network Systems -sited Interconnection

For Equant Network Systems-sited interconnection, the operator will supply and operate an Interconnection Link in its entirety. The Interconnection Link will remain in the Operator's property.

The Point of Interconnection shall be located at the Access Point on the DDF (digital distribution frame) or ODF (optical distribution frame) of the Party that has the operational responsibility for the Interconnect Link.

Equant Network Systems will permit Equant Network Systems -sited interconnection at the site identified under the abovementioned National Interconnection Site.

In its request for Equant Network Systems-sited interconnection, the operator will describe his needs regarding the installation of transmission equipment. Whenever Equant Network Systems determines that Equant Network Systems -sited interconnection is not reasonably feasible, it will inform the operator and the ComReg of the reasons of such unfeasibility within 15 working days of receiving the request. Equant Network Systems will comply, should the ComReg find that Equant Network Systems -sited interconnection is reasonably feasible.

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In case Equant Network Systems -sited interconnection is unfeasible, Equant Network Systems will cooperate with the Operator in order to find an appropriate alternative solution.

Interconnection Links

The tariffs for Interconnection Links are indicated in Annex 2.

The operator is responsible for the dimensioning and payment of the Interconnection Links required for the conveyance of its own traffic. An operator's own traffic consists in the traffic for which the operator is billed by the operator whom it interconnects with.

The operator is responsible for:

- the traffic conveyed through its system and handed over at Equant Network Systems Access Point in order to use Equant Network Systems Terminating Access Services.

The operator shall supply capacity requirements, forecasts and routing data every 6 months to Equant Network Systems for a 12 months planning. This information will only be used by Equant Network Systems for dimensioning of its network and will be kept strictly confidential. The signaling systems between Equant Network Systems and the operator will be based, where relevant, on the SIP protocol. Technical details will be agreed upon between the operator and Equant Network Systems.

At the transmission level, the interconnection is based on the Ethernet interface (exact details to be agreed between the operator and Equant Network Systems).

Quality of service of Equant Network Systems 's Interconnection Services

As far as the Interconnect access service is concerned, Equant Network Systems undertakes to ensure for its own system a network failure rate, which does not exceed 1% 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 operator to be terminated on Equant Network Systems 'network and failed due to insufficiencies in Equant Network Systems' network and the total number of calls handed over by that operator to be terminated on Equant Network Systems '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, Equant Network Systems 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 Equant Network Systems 'and operator's 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 ComReg shall be informed if the above-mentioned measures for traffic regulation have to be applied and how long they may last.

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Equant Network Systems shall respect the quality conditions as defined in the applicable legal regulation and in accordance with the quality Equant Network Systems provides to its customers.

The KPIs covering the provisioning time and fault repair time, are always stated in the “SLA and escalation matrix” document.

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Interconnect access services

Terminating Access Service

The terminating access service conveys a call handed over from the operator's system, at an Equant Network Systems' access point for termination on any number category of Equant Network Systems' network.

Tariffs may be different for different categories of services identified by different number ranges.

Equant Network Systems operates geographic numbers and non-geographic numbers 076.

The tariffs applied by Equant Network Systems 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 the Calling Line Identifier (CLI) is transferred to the telecommunications network of Equant Network Systems, Equant Network Systems 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.

Originating access service

Equant Network Systems could optionally offer only Access to Operator Freephone Service to Freephone number 1800, subject to technical feasibility. This service consists in the conveyance by Equant Network Systems of calls originated in Equant Network Systems' network, handed over to an operator at a national point of interconnection between the operator's system and Equant Network Systems' system for termination in Operator's network, on one of Operator's freephone numbers (1800x) in accordance with the national numbering plan of Ireland.

Transit access service

Equant Network Systems does not offer any transit access service towards its network for operators.

Leased Lines Interconnection Service

Equant Network Systems does not offer any leased line interconnection service on its network for operators.

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Number Portability (NP)

Introduction

Porting within the Republic of Ireland is governed by the Regulator ComReg and managed by a third party, Porting XS, that provides and operates the number porting portal used by all CPs .

Scope

The rules and specifications for porting are defined within the Fixed Number Portability Industry Process Manual (IPM). In essence each operator has access to the web-based porting portal where the importing of numbers can be requested. Also this portal is used for validating the current providers' details and communicating the opening of new ranges assigned to a CP by the Regulator.

Porting activity is accepted between the hours of 09:00 and 17:00 Monday to Friday excluding national and bank holidays. Any out-of-normal-business-hours porting requests have to be agreed upfront by both the donor operator and the recipient operator if they are to take place. However it should be noted that all routing changes with all carriers may not be completed till the next business day.

A porting request cannot be made any further than 15 days into the future. The donor operator has 4 hours to validate any export request and either accept or reject it. On the day of porting there is a maximum of 2 hours allowed for the porting to be completed and all other providers to update their routing tables once the recipient provider requests the port to be activated.

Emergency restore can be implemented but is effectively the re-porting of the number back to the original operator, so the "old" provider has to be contacted separately and has to agree to take the number(s) back. At this point the "old" provider will place a new import request and the porting back to the original provider will be completed.

Tariffs and Billing

All the charges associated for each port request as well as annual costs are specified within the "Central Fixed Porting Number & Porting Database Agreement" schedule B.

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Annex 1 : Interconnect Prices

1. Terminating Access Service

Calls to geographic and non-geographic numbers terminated in the Equant Network Systems' network

This service consists in the conveyance by Equant Network Systems of calls handed over by an operator at a national point of interconnection between the operator's system and Equant Network Systems' system for termination on Equant Network Systems' system, on one of Equant Network Systems' geographic numbers in accordance with the national numbering plan of Ireland.

The rates to be paid to Equant Network Systems for terminating access service to Equant Network Systems' geographic numbers are as specified below:

Prices effective from August, 1st, 2019

Charging Level	Price Per Min, in EUR			Price Per Call, in EUR		
	Peak	Off peak	night	Peak	Off peak	Night
Primary – geographic and 076 number	0.00063	0.00063	0.00063	0	0	0
Tandem geographic and 076 number	0.010412	0.005206	0.00419	0	0	0

2. Originating Access Service

Calls to free phone numbers originated in the Equant Network Systems' network

This service consists in the conveyance by Equant Network Systems of calls handed over to an operator at a national point of interconnection between the operator's system and Equant Network Systems' system for termination in Operator's system, on one of Operator's free phone numbers (1800x) in accordance with the national numbering plan of Ireland.

The rates to be paid to Equant Network Systems for originating access service to Operator's free phone numbers are subject to negotiations.

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Annex 2: Tariffs applicable to the interconnection link service

Equant Network Systems -sited Interconnection

Monthly charge per used Interconnect Site (covering billing, maintenance and service quality control): 250- EUR

Installation charge covering project preparation, allocation of resources, testing and all the administrative aspects : 2,500 EUR.

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 that operator if these changes apply to existing interconnect trunks.

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

Change required by the operator	Tariff (EUR)
Establishment of a new trunk	700
Modification or cancellation of an existing trunk	500
Connection or disconnection of circuits	200