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| IP Exchange Technical Description V6.6 |
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| [Author name]  [Date] |

BT IP Exchange

Product Handbook

Version 36

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#### Document History

This section provides a brief description of the changes between issues of the BT IP Exchange Product Handbook.

| **Description of change** | **Issue** | **Date** |
| --- | --- | --- |
| Document reformatted, All sections reviewed and updated accordingly. | 36 | October 2021 |
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# Outline of the service

***BT Wholesale’s IP Exchange*** is a product positioned to meet the growing interoperability requirements in the world of IP communications allowing Communications Providers (CPs) with differing vendor, signaling and media options to interoperate seamlessly with each other. The product also allows for the routing and connection of calls with the existing TDM based PSTN.

There are two variants of the service:-

* *Type A*: A managed service offering
* *Type B*: Standard carrier interconnect offering

The service includes UK specific services such as number portability and emergency services.

There are different contracts for each service.

# Key Features and Availability

The basic premise of IP Exchange is that it will reduce the overhead of each ISP or service provider negotiating bilateral agreements for interconnecting VoIP gateways, including end user address discovery.

## Functionality and Usage Scenario

BTW will register and maintain an operator’s numbers on the Call Routing Engine directory. Incoming calls from the internet to a VoIP operator’s number will be pointed to the BT IP gateway. This places the call onto BT’s IP network, with a full range of security and value-add functions (e.g. financial settlements, authentication, anti-spam, user-defined filters etc).

The BT IP Exchange is more than just a termination point. It is an interoperability provider for other communications providers, offering a mixed portfolio of termination, financial services, and enhanced applications. It offers:-

* Utilisation of BT’s porting agreements for import *Type A*
* Sub-allocation of telephone numbers *Type A*
* IP interface to avoid investment in media gateways
* Industrial, scalable platform utilising BT’s investment in its 21CN evolution
* High availability and reliability achieved through resilient architecture
* Expert resources provide fast T2R resolution
* A single point of contact for termination of telephony minutes worldwide
* Quality of service (QoS) monitoring
* Bandwidth and IP access provisioning

# Service Exceptions

There are service exceptions involving:-

* Fax calls using G.729 may operate successfully however this is not guaranteed.
* Short Message Service and Text Messaging are NOT supported.
* Non-E164 PSTN numbers are not supported for calls terminating outside of the UK.

Break Out Calls within the UK to:-

* 112 European Emergency Services, CPs are required to change all calls originating as 112, to 999 before passing these to IP Exchange should the 999 Access option be chosen as party of the service contract.
* CPs are required to convey to BT all Emergency Calls with a full network CLI.
* Dial up Internet Services are NOT supported.
* Video Calls that require IP to TDM translation.

# Quality of Service

The IP Exchange service is designed to deliver a reliable and resilient customer experience through the use of tried and tested components, sourced from our strategic partners in industry. We manage quality using the following methods:

***MOS (Mean Opinion Score) Probes -*** voice quality probes to monitor voice quality.

***Platform Resilience*** – provided for all CPs - access session border controllers are deployed in resilient pairs within the same location and additional layers of resilience can be achieved refer to section 3.9 of the Technical description at: [Technical Description](https://www.btwholesale.com/pages/static/Products/Voice/IP_Exchange/handbookandtechnical.htm).

***Access Service Assurance –*** CPs have the option of gaining additional service assurance by making their access method (Internet vs Direct Access vs Direct Connection) resilient to their allocated Session Border Controller resilient pair or to a separate PoP.

***Geographic Service Assurance*** – additionally CPs can elect to match their own call server resilience through a second proxy accessing a second platform resilient pair of session border controllers deployed in another geographic separate BT site.

***Signalling Monitoring*** – The signalling interfaces within or connecting to the service will be monitored on a continual basis.

***Bandwidth and Call Control*** - It is the CP’s responsibility to keep within subscribed bandwidth and the maximum number of concurrent calls allowed.

In the case that a CP delivers more traffic to a BT POP, BT’s network will return the SIP Response 503. The only exception to this rule will be for emergency calls, which will be allowed regardless of subscribed limits.

Please refer to Calls per second table in section 4.4.15 of the Technical description at: [Technical Description](https://www.btwholesale.com/pages/static/Products/Voice/IP_Exchange/handbookandtechnical.htm)

The method of access to the service and the service quality of the CPs own IP network will also influence the end-to-end quality.

# Calling Line Identity support

IP Exchange supports both Network and Presentation CLIs - section 6 of <http://stakeholders.ofcom.org.uk/telecoms/policy/calling-line-id/caller-line-id/> provides a short definition of these terms.

# Real Time Traffic Management

Real Time Traffic Management (RTTM) is defined as the real-time surveillance and control of traffic flow on the Public Communications Network, with the aims of both maximising the effective use of available capacity for call completion during periods of overload and maintaining the defined Grade of Service.

BT’s Network Protection Policy

To enable BT to discharge its responsibilities in relation to the General Conditions of Entitlement A3 and EC-RRG, there may be occasions, e.g. during high profile media phone-in events or during a disaster scenarios, where call gapping measures need to be implemented to protect network components from excessive overload, both within the BT network and connected CP networks.

During excessively high profile media events, which terminate in BT’s network, BT will liaise with the other parties as appropriate to request the application of overload controls on the incoming interconnect routes and likewise for events terminating on the network of another party, BT will, when requested, apply reasonable overload controls to provide protection to that network.

This ensures that all reasonable steps have been taken to maintain the effective functioning of the Public Communications Network including uninterrupted access to emergency services.

## Traffic Controls

To protect its own network each party’s NMF may apply controls within its own network without necessarily gaining agreement from the other party, even though traffic destined for that other party’s network may be affected. In these circumstances the other party’s NMF will be consulted, whenever possible in advance, and given advice of the application and subsequent removal of the controls.

Any issues can be resolved by using the normal escalation procedure, using the contact points as documented in the CSP.

## Traffic Control Methods

There are three main types of real time traffic control, in order of preference:

**Automatic**

Use of in-built bilateral automatic switch overload controls (SIP overload controls are currently being defined in NICC).

**Expansive**

Use of alternative traffic routing to temporarily move traffic away from the affected switch(es) (dependant on the available network architecture).

A re-route control may mean that the affected traffic will be temporarily carried over the originator's network for a greater distance than normally expected before being offered to the other CPs network. The NMFs will have responsibility for activating and removing the re-route options for each incident.

**Protective**

Protective controls prevent equipment elements being put in jeopardy due to excessive call attempts, problems and overloads in the other party’s network.

The protective call-gapping control would mean that traffic destined for the other party’s network may be restricted by the application of the control. This control will normally, although not necessarily, be applied on the receipt of a formal control request.

Liaison between NMFs to query real time network traffic status and to consider application of controls should not be made via Fault Reporting Points (FRPs) unless a preceding fault identified the traffic problem, in which case the ‘lead’ FRP should be updated on an hourly basis.

## Traffic Control Requirements

1. Both parties must jointly implement SIP Overload Control functionality once published by NICC where testing has shown their equipment supports it.
2. Both parties must use reasonable endeavours to ensure that its end-users do not plan large 'Phone-in' type events without prior consultation. In circumstances where large amounts of traffic are expected both parties will liaise and agree the application of any controls giving at least two days’ notice.
3. When a party detects an unplanned event the other party should be advised using the agreed channels as quickly as practicably possible.
4. Both parties must liaise and endeavour to assist each other to overcome traffic management issues in the other party’s network in a real time basis.
5. Any applicable controls must be applied by both parties in reasonably short timescales.
6. In normal circumstances, both parties will communicate as necessary to achieve a co-ordinated traffic management effort.
7. Where appropriate, each party will notify the other in a timely manner when major problems occur that are likely to affect interconnect traffic.
8. Each party may operate controls within its own network in response to perceived problems in either party’s network. Where there is a direct effect on the other party’s service the initiating party will advise the other party when such action is taken detailing the scope, cause, impact and likely duration of the problem. The initiating party will also notify the other party of removal of any controls.
9. If either party considers that the use of traffic controls by the other party is acting to the detriment of its own network's performance, both parties agree to discuss the concerns using appropriate escalation contacts as defined in the CSP. Any issues arising should be addressed at the service review process as documented in the CSP.
10. Traffic information relevant to an existing or perceived problem must be provided as quickly as practical by to the other party on request. Under no circumstances will either party be required to provide commercially sensitive information, nor shall the information supplied be used for any other purpose than traffic management purposes.

## Large Call Events

**Requirements**

Both parties must make every effort to ensure that their service providers inform them prior to large call events which may cause network congestion. Liaison between the respective service providers and the two parties should be part of normal business practice.

Both parties must ensure that they have adequate NMF capability available to assist during major incidents and planned large phone-in type events. In circumstances where large amounts of traffic are expected, both party’s NMFs will liaise directly and agree appropriate traffic management actions

There are two scenarios each with differing timescales for advising the other party:-

1. Planned Phone-in type events - minimum two working days’ notice is required
2. Unplanned traffic flow problems or congestion during normal operations – controls normally to be applied within 30 minutes or as soon as operationally possible

The availability of such controls and degrees of selectivity and possible speed of implementation shall be agreed in advance and documented in the CSP.

## Requesting / Notifying Implementation of Controls

Where it is necessary for one party either to implement controls which will affect the other party’s traffic, or request reduction of traffic from the other party, then that party must notify the other party in line with the time scales in section 7.5.



The requesting / notifying party must use the ‘Traffic Management Controls Request Form’ attached.

## Traffic Management Controls Request Form Process

All fields should be completed. Any known related fault references should be included in the ‘reason’ section of the form. All communications will be logged and given a unique reference number by both parties for tracking and reference purposes.

Confirmation of actions, either taken or requested, should be given by the requesting party by completing Section A of the form and sending it to the other party, as per the agreed communication method.

The party receiving the request will either note or apply the controls and confirm by completing Section B of the form and return it to the originating party via the agreed method.

The originating party, on seeing that the problem has cleared, will either inform the other party of the removal of controls, or request removal of controls by completing Section C of the form and again passing it to the other party via the agreed method.

Finally, the appropriate party will either confirm removal of the controls, or acknowledge receipt of notification of the controls, and conclude the process by completing Section D and returning the form to the other party.

|  |  |  |
| --- | --- | --- |
| **Entity** | **Contact Number** | **Email** |
| BT NMC | Tel: 0800672250 (24 hrs)  Or  Tel: 0800679746 (24 hrs) | nntm.nntm@bt.com |

Please note: In order for BT IP Exchange to manage your capacity effectively, please advise your account manager and send an email to [ipexchangesupport@bt.com](mailto:ipexchangesupport@bt.com) with any mass call events you may be hosting 28 days ahead of the date.  This will enable us to plan and work with you to ensure that there are no issues on the date of the event

# Pricing

Current prices can be found on the BTW website:-

* *Type A*  [IP Exchange - Products & services | BT Wholesale](https://www.btwholesale.com/products-and-services/voice/ip-exchange.html#pricing-and-contracts) (select Related Documents, then Pricing and Contracts)
* *Type B* [Carrier Price List](https://www.btwholesale.com/help-and-support/pricing/carrier-price-list.html)
* *Regulated Services* [Carrier Price List](https://www.btwholesale.com/help-and-support/pricing/carrier-price-list.html)

***Interoperability Test Charge***– this charge will be applicable where a CPs call server equipment requires compatibility and interoperability testing with the BT service. This will be done prior to service establishment.

***Service Establishment Provision Charge*** – a non-reoccurring, cost orientated provision charge to cover all initial provisioning activities and service establishment.

***Port Management Charge*** – covers the bandwidth capacity, service interface, resilience level and management of CPs capacity e.g. capacity changes, number management, data build etc. There are 2 port types:-

* Commercial ports for non-regulated traffic
* Regulated ports for regulated traffic

Port charges are invoiced monthly in advance.

Regulated ports are calculated using the prior months regulated traffic volumes.

The initial Port requirement carries a 12 month contractual term.

Minimum order quantity of any Port type at any site is 30 Ports.

CPs must maintain a minimum Port quantity of 30 Ports (of a single access type at a single site).

***Call conveyance*** – calls will be invoiced monthly in arrears on a pence per minute basis measured by the second and rounded up to the next second.

***Call termination*** – commercial settlement may be paid for calls terminating on a customer’s IP Network.

***Number Porting*** –These charges will apply on a Single or Multi-Line or Non-Geographic basis.

***Number Sub-Allocation*** –Only available to managed service *Type A* customers. This is available in the UK and consists of a one off (non-reoccurring) set up charge per number sub-allocated to cover BT’s internal costs of breaking out, re-routing and sub-allocating numbers, please refer to the Number Sub-Allocation Handbook for further information which can be found at: [Technical Description](https://www.btwholesale.com/pages/static/Products/Voice/IP_Exchange/handbookandtechnical.htm)

***Number Export*** (Scenario 7) – Only available to managed service *TYPE A* customers. Ordered via the managed services portal.

# Billing

## Credit Vetting

All CPs will be credit vetted using the standard BT credit vetting process which can be found at:

<https://www.btwholesale.com/pages/static/help-and-support/contracts.htm?id=credit_vetting_policies_click>

***Credit Vet 1*** is a high level check of the trading entity and its directors.

CPs will be asked to provide traffic profiles as part of the initial CRF information gathering process and for Initial and future port capacity increases.

CPs will also be asked to select a ‘Barring Profile’ which limits the customer’s fraud liability by electing not to pass certain high value call types e.g. fixed fee NTS and/or all PRS calls.

***Credit Vet 2*** is based on the CPs forecast traffic profile and call barring option selected.

Depending upon the outcome of the second credit vet CPs may be asked to provide financial surety as set out in the BT Credit Vetting Process. In some cases CPs may be placed on a billing periodicity less than the standard 30 days (see below).

Direct Debit is the preferred method of payment.

***Pre-Payment***

Pre-payment is an option for CPs wishing to use BT’s IP Exchange in the UK, CPs are asked to lodge a sum with BT that is then reduced according to their usage of the service. Prepay handbook can be found at: <https://www.btwholesale.com/pages/static/products-services/ip-exchange.htm#accProducts=2>

## BT Billing Reports

Billing will be handled via the BT Interconnect Billing process and normally invoiced on a monthly basis. CPs will normally have 30 days in which to pay the previous period’s invoice (this may vary subject to credit vetting results).

Invoices are backed up by an aggregated CDR (Call Data Record) feed which shows the volume, time of day and value of calls aggregated by call type and terminating network. The backup feed is intended to aid invoice verification and does not include details of the originating end user number.

It is assumed that the CP has the ability to generate their own CDRs for billing their end users.

Where applicable, CPs will be expected to invoice BT for calls terminating on their network containing the same granularity of information as outlined above. For clarity; BT will not be providing this information to CPs.

The e-mail and Postal address for CPs to send their bills to BT are:-

[btw.financial.integrity@bt.com](mailto:btw.financial.integrity@bt.com)

Financial Integrity Team

Crawley TEC

Fleming Way

Crawley

West Sussex

RH10 9JY

**eBilling**

All CPs will have an eBilling service

eBilling registration process:

Log into [www.btwholesale.com](http://www.btwholesale.com) with your username and password

Pick My Apps, and then Billing, and then eBilling

Click on Subscribe now, then click on the box to request this resource (please see below)

**Manage Billing**

eBilling enables you to view your bills online and to download back up information for reconciliation purposes.

Request this resource Lead time: 24Hrs

Scroll to the bottom page, in the notes field please quote the BT Wholesale Billing account number(s) that you are requesting access for. Then click on Ready.

Once access has been granted, you will receive a system generated email, confirming access has been given.

Any questions please feel free to contact the Billing Customer Management Team on 08002182032 or [www.btwholesalebilling@bt.com](http://www.btwholesalebilling@bt.com)

Note: new CPs will not be set-up on our billing systems without the ebilling authority and customer (BTWholesale portal) set-ups in place.

# Ordering Process and provision

The CPs Account Manager (or Sales Specialist) will be able to assist the CP in the ordering process in the first instance and will have the necessary Contractual documentation, and Customer Requirements Form (CRF) to gather requirements.

The latest version of the CRF can be found at [Customer Requirements Form](https://www.btwholesale.com/products-and-services/voice/ip-exchange.html#handbook-and-technical-documents)

A Technical Account Manager (TAM) will support the CP through the booking of Interoperability Testing (IOT) and associated provision activity.

## Interoperability Testing (IOT)

To ensure that the CPs equipment and software version are fully compatible with the BT IP Exchange platform, a degree of interoperability testing may be necessary. (The activities involve a pre- interoperability testing meeting/call to gather customer requirements and scope in the applicable interoperability testing tests). Please refer to the attached Interoperability test spec:-



[*https://www.btwholesale.com/products-and-services/voice/ip-exchange.html#handbook-and-technical-documents*](https://www.btwholesale.com/products-and-services/voice/ip-exchange.html#handbook-and-technical-documents)

The length of the testing cycle is dependent upon a number of factors including the services to be used and the availability of CPs test engineers etc.

Once a signed contract has been received by the BT Account manager or Sales Specialist, the TAM Team will book the next available test slot and communicate this ‘time window’ to the CP. The TAM Team may also arrange a Pre-IOT Connectivity call to ensure both parties are ready for the IOT itself.

Any data build work required in the UK PSTN must follow a regulated DMA (Data Management Amendment) process and takes not less than 30 working days to complete. Should a CPs numbering requirements be complex a ‘Complex DMA may be required which has a longer lead time of not less than 75 working days. The TAM will advise which type of DMA will be required if any. For Type A managed service contracts the TAM will manage the CP numbering requirements as specified on the initial CRF.

Once a CP has successfully completed Interoperability Testing, the TAM (Technical Account Manager) will hand over the CRF to the IP Exchange Customer Management Centre Team who will manage Service Establishment. The TAM will advise the CP of the ‘live’ IP addresses that should be loaded onto the CP equipment as the provision progresses.

## Service Establishment

The IP Exchange Customer Management Centre can be contacted via email [wolverhamptonipexchange@bt.com](mailto:wolverhamptonipexchange@bt.com).

The Customer Management Centre will manage all remaining aspects of Service Establishment, and Number Porting once in-service on the live platform and open billing accounts.

The CP will be contacted by our Customer Management Centre once Service Establishment work has been completed and asked to send some test calls (acceptance into service (AIS)) to confirm settings on both the BT IP Exchange live Platform and the CPs equipment. This is to prove that the service has been provisioned correctly and that calls can be passed.

On completion of Service Establishment the Customer Management Centre will advise the CP by email and receive a Welcome Letter, Customer Service Plan and Product Handbook.

Failure to complete AIS process steps will delay completion of Service Establishment.

Failure to be cooperative with the timely completion of 999 Service Establishment activities will result in BT stopping any future IP Exchange expansions and could result in the IP Exchange service being suspended.

## Port Capacity Amendment

Amendment to a CPs Port Capacity is achieved by the submission of an IPX Forecast Sheet followed by an associated Capacity Change Order request (via email).

The IPX Forecast Sheet should be sent to the TAM Team via email to [interconnect.team@bt.com](mailto:interconnect.team@bt.com) on a rolling twelve month basis every four months and not less than fifteen working days before the start of the new period. Subject to agreement of the forecast by the TAMs, both parties will commit to the agreement and raise orders within the specified month and deliver within standard timescales. Any orders not raised at the end of a forecast period (per month) will result in rental charges being applied in line with the forecasted port volumes.

The initial order capacity is 30 Ports but any number above this minimum is acceptable i.e. 35 Ports. In addition BT will provide an additional ‘reserved buffer’ of 5 ports for UK 999 services where applicable. This bandwidth will not be available for normal calls; however 999 calls can consume any or all of the bandwidth provided.

Any non- forecasted capacity change requests will be delivered on a reasonable endeavours basis as will any orders raised during a period where an MBORC (Matters Beyond Our Reasonable Control) has been declared.

Note: We equate the number of ports provisioned to a Calls per Second (CPS) rate per SBC. As mentioned previously in section 4 above), which allows us to balance the traffic and performance across all CPs on a Session Border Controller as there is a finite limit on the performance of an SBC. CPs requesting above the standard Port to CPS limit, must provide additional information on the type of traffic to be carried, this will include service type, direction of calls, calling rate, volumes of calls, traffic profile (Day, Eve, W/E). No guarantee can be given that we will permit the expansion of a CPs services should this expansion put at risk CPs co-located on the same SBC(s).

## Number Management – Customer Number Range Hosting

BT IP Exchange can host numbers allocated to CPs by Ofcom. Any new number blocks obtained from the regulator should be notified to the TAM in the form of an Ofcom certificate (and Letter of Authority if appropriate). IP Exchange *Type B* customers are responsible for submitting their own routing plans via the Routing Plan Database which is available on [www.btwholesale.com](http://www.btwholesale.com) and associated DMA (Data Management Application). IP Exchange *Type A* routing plans and DMAs are submitted by the TAM on receipt of the relevant documentation from the IP Exchange *Type A* customer.

It is the CPs responsibility to ensure that the BT IP Exchange TAMs are provided with timely updates of Numbering changes (additions and losses) to ensure service levels are maintained.

## Number Management – Portability

Please refer to the Number Portability Handbook. <https://www.btwholesale.com/pages/static/products-services/ip-exchange.htm#accProducts=2>

## Number Management – Sub-Allocation of BT Number ranges *TYPE A*

BT has geographic & non geographic numbers allocated to IP Exchange for sub-allocation to UK IP Exchange *Type A* CPs to support their service. These are available at [www.btwholesale.com](http://www.btwholesale.com) under the IP Exchange application. There is a set up charge per number (see section 5) which will be billed to the customer when the CP provides the appropriate Name, Address and Postcode for the end user.

Please refer to the Number Sub-Allocation Handbook.

<https://www.btwholesale.com/pages/static/products-services/ip-exchange.htm#accProducts=2>

## Emergency Services Database (ESDB)

**Ofcom’ General Conditions of Entitlement A3.2** states that within the Telecommunications Industry it is a regulatory requirement for Communications Providers (CP’s) to obtain Caller Location Information from their customers and pass that information on to the Call Handling Agency (CHA i.e. BT) in a timely manner, so that accurate and reliable Call Location Information is available, at the time the call is answered by the CHA, for all emergency calls received.

### IP Exchange sub-allocated numbers.

These are BT numbers that are sub-allocated to CPs. As these numbers are owned by BT (CUPID ID - 001), BT is the only organisation allowed to manage these numbers (in relation to allocation to a CP and updating the ESDB). For these numbers to be activated by a CP, a CP MUST provide via the IP Exchange on-line portal - NUMBER, NAME, ADDRESS & POSTCODE. This information will be passed to the ESDB as the Caller Location Information. Information on how to access the IP Exchange on-line portal and obtain additional guidance on number allocation & activations can be found in the ‘Number Sub-Allocation Handbook (for UK IP Exchange customers.

If a CP wishes a number to be imported to IP Exchange (effectively becoming a BT owned number under BT’s CUPID ID (001)), a CP MUST ‘adopt’ this number onto IP Exchange by providing via the IP Exchange on-line portal – NUMBER, NAME, ADDRESS & POSTCODE. This information will be passed to the ESDB as the Caller Location Information. Additional information on number porting can be found in the ‘Number Portability Handbook (for UK IP Exchange customers).

To maintain the information on the ESDB, CPs can either use the ‘Premises Move Tab’ or the ‘ESDB amend Tab’ on the IP Exchange on-line portal.

ESDB for IP Exchange sub-allocated numbers can ONLY be updated via the IP Exchange on-line portal.

### CP Ofcom owned number ranges. *TYPE B*

These are numbers that have been directly allocated to a CP by Ofcom. They are owned by the CP and are the responsibility of the CP to maintain the Caller Location Information held, for these numbers, on the ESDB. The method for updating the ESDB is by sending data files (per CUPID) via ftps to BT’ staging server (Calypso). Records within the data files must be in the emergency file format – EFF.

NB; CUPIDs should be obtained from Ofcom.

Access to Calypso (ESDB staging server).



Emergency File Format for 999.



User Handbook for 999.



ESDB for CP Ofcom owned numbers can ONLY be updated via Calypso.

NB; documents provided are for reference only. For all the documentation relating to 999 service establishment, please contact Ian Watson at [999.product.management@bt.com](mailto:999.product.management@bt.com)

### Annual Customer Audits.

Ofcom has a monitoring and enforcement programme in place to ensure that CPs are compliant with General Conditions of Entitlement A3.2. Discrepancy data information requests from Ofcom, via formal s135s, are sent to BT and individual CPs. Failure to provide Caller Location Information could lead to an Ofcom investigation.

To help CPs achieve compliance with Ofcom’ General Conditions of Entitlement A3.2. CPs should conduct an annual audit to compare Caller Location Information held on the CP’s own database with the Caller Location Information held on ESDB.

IP Exchange has developed an automated audit facility to allow CPs to check the accuracy of their customer information (Caller Location Information) held on ESDB. This facility is available for numbers which have either been imported to IP Exchange or, sub-allocated from IP Exchange.

**Audit Process:**

IP Exchange sub-allocated or Imported numbers.

It is essential that CPs have access to Secure Data Exchange & Distribution System (SDEDs) to perform these 999 customer audits.

The audit can be completed in three ways:

1. **Automated quarterly audit**
   1. On the 28th of March, June, September & December, a file will be made available for each of the IP Exchange CPs on their SDEDs account, which will contain their entire number inventory held by IP Exchange.
   2. The file ‘ESDB AUDIT report’ will be available via SDEDS (Secure Data Exchange & Distribution System)
   3. CPs will check the data against their own inventory, ensuring that the name and address details match their records.
   4. On SDEDs our CPs will have access to an ESDB Macro input file' for the return of their amendments and missing records.
   5. CPs to follow the format within the instructions tab of the macro input file.
   6. It is essential that CPs enter the correct DUNSID, as this will automatically populate the input file with the required naming convention for the Secure Data Exchange & Distribution System (SDEDs).
   7. After completing the inputs, the CP select ‘generate CSV’ option to create the input file to upload to SDEDs.
   8. If a CP has already completed a yearly audit and doesn’t wish to complete additional quarterly audits, they can upload the acknowledgement file (blank file) using the ESDB macro to supress the audit/reminder KCIs.

Key points to note

The maximum number of records that can be uploaded in a single day is 50,000. This can be sent in a single or multiple file(s) but the total must not exceed 50,000 per day.

For example, the CP can send one file containing 30,000 records and a second file with 20,000 records. But if the second file also contains 30,000 records, then the CP will receive an error and the additional records will be rejected back with Error Code 309 within your SDEDs response file.

Our systems can process a maximum of 19,000 records per day, so a file with 38,000 records will take 2 days to process.

KCIs (Keep the Customer Informed)

A KCI will be sent when the audit file is made available.

Two additional KCI reminders will be sent at weekly intervals.

Escalation to follow if no action taken by the CP.

**Uploading your input file to SDEDs**

CPs will need to access the ‘IPEXESDB’ folders within your SDEDs account. The folder will contain ‘Request’, ‘Response’ and ‘Archive’ sub-folders. Please note:

* CPs should upload their input file to the Request folder and download the output file from the Response folder.
* The Response (or ‘output’) file will have the same date as the Input file. To allow the CP to reconcile their data against the input file, multiple output files will be identified with the same date as the input file.
* The Response file will contain final status error codes only.
* The Response file will remain in the Response folder for 5 days before moving to the Archive folder. It will be kept in the Archive folder for 15 days and then permanently removed.

999 Confirmation and Error Code Messages



1. **Ad hoc audit request (monthly)**
   1. A new monthly audit file can be requested from the 28th of each month.
   2. To request the Ad hoc audit file, on SDEDs, select the Ad hoc request tab within the ESDB Macro input file.

Note: Remaining process follows on from point C in section 1 above.

1. **Customer can request an inventory comparison (not yet available TBC)**
   1. On SDEDs our CPs will have access to an ESDB Macro input file’, the CP will input the data and generate a .csv file and rename the file using the following format: <DUNSID>)\_CPAUDIT\_<YYYYMMDDHHmmss>.csv

Any discrepancies between CPs data and IP Exchange inventory will be updated.

To obtain an audit file of a CPs Ofcom owned numbers; CPs should contact [deana.surtees@bt.com](mailto:deana.surtees@bt.com)

### Use of ii digits over IP Exchange.

Interconnect Identifier (ii digits) are allocated to a Communication Provider (CP) by BT. CPs are notified of their ii digit on successful completion of IOT.

ii digits are used by BT to identify the network and call type of an emergency call. It is important that emergency calls are conveyed to BT in the format 999ii where:

1. “999” identifies the Call as an Emergency Call (for the avoidance of doubt Customers will be expected to translate any 112 calls to the expected 999 format and 112 calls will not be conveyed by BT); and
2. “ii” is the code by BT which identifies the Emergency Call as a VOIP originated Emergency Call from one of the CP’s End Users.

An End User of an IP Exchange CP’ would be using an IP Exchange sub-allocated number, or a number ported to IP Exchange, or a CP’ own number (allocated to them by Ofcom) that is hosted on the IP Exchange network.

The IP Exchange ii digit should not be used for BT WLR or non-CP owned numbers.

## The Supply of Directory Data to the BT Directory Management System (DMS)

### Overview

BT Directory Solutions (BTDS) provides Industry with a single database, known as the Directory Management System (DMS), for storing all Directory Information.

Customer Directory Information provided to DMS will be used as follows-

To maintain the UK core directory information database known as DMS.

The provision of directory information services and directories by Directory Enquiry Providers (e.g. 118 directory enquiries services, Internet services, teleappending services, phonebooks, Classified services, etc.)

The publication by BT of directories ensuring that BT’s obligation to General Conditions of Entitlement B2 under section 45 of the Communications Act 2003 is complied with.

Also in exceptional emergency circumstances the customers Directory Information may be used by BT to perform an emergency service where a few specifically trained BT Retail voice directory enquiry operators can connect authorities to ex-directory (XD) telephone numbers held on the Database.

### Process for CPs with their, own OFCOM allocated number ranges and CUPIDs

CPs with their own OFCOM allocated number ranges and CUPID (a unique code to identify the individual CP network) should contact BTDS. BTDS will explain the methods available to supply their directory data, and the steps involved.

* For more information please use the Directory solutions link: <https://www.btwholesale.com/pages/static/products-services/directory-solutions.htm>

### Process for BT Wholesale IP Exchange Sub-Allocated numbers *Type A*

Any CP who has BT IP Exchange Sub-Allocated numbers assigned to them, should contact the BT IP Exchange Customer Service team at [wolverhampton999@bt.com](mailto:wolverhampton999@bt.com) to obtain an IPX manual order form. Please include “Directory Entry” within the email header.

Process:

* IPX CP to complete manual order form with their Customer Directory Information. The manual order form contains:

Mandatory details required for directory listings - trading name, address with a locality, full postcode, and telephone number

Entry Type of listing:

**DE: Directory Entry** – listing will feed to all directory products including the local BT Phone Book if it is a main directory listing. Only business listings are passed to classified products.

**DQR: Directory Enquiry Record** – listing will be available to Voice 118 services, Internet services and Tele-appending services only. Business listings are also passed to classified products.

**XD/NC: Ex-Directory No Calls** – listing will feed to Voice 118 services, Internet services and Tele-appending services but the telephone number is withheld. (\*Note - Only one XD/NC listing per customer per address is permitted if no other number is shown at the same address.)

\*This only applies to listings belonging to the same franchise.

* The completed form should be emailed to the BT IP Exchange Customer Service team at [wolverhampton999@bt.com](mailto:wolverhampton999@bt.com). Please include “Directory Entry” within the email header.
* The BT IP Exchange Customer Service team will enter the listing details onto DMS

Please see below Manual Order IPX Form and Guide for more information.



### Special Phone Book Entries (SPBEs)

Only directory listings classified as main listings with a full postcode and an entry type of DE are entitled to a free of charge listing in The BT Phone Book.

Note: Not all listings are suitable for inclusion in the BT Phone Book. For full details please see BTs Directory Entry Entitlement Policy-

<https://www.thephonebook.bt.com/media/pdf/Conditions%20for%20Phone%20Book%20Entries_Final%20Dec%202019.pdf>

BT Special Phone Book Entries (SPBE) are chargeable and can be requested by indicating on the MO form which phone book area is required.

Note: If a telephone number is ported onto the IP Exchange Platform and this has a SPBE listing on DMS it will be ported 'as is' and charges will apply.

### Pricing

For SPBE prices please see the Wholesale Annexe A rate card in the IP Exchange Pricing & Contracts section.

There are two types of charges for SPBE listings: National and Non-National.

## National SPBE

This is a SPBE listing which will appear in all BT UK Phone Books, any listings requested by a CP with a PB code of PB800 or PB801 in DMS. This directory listing will incur an annual charge if the SPBE listing is live on DMS on 30 September 2014 and on each anniversary of this date. Any SPBE listings added to the database after the end of September each year will be charged on a reduced pro rata basis. This will cover the period between the first relevant Phone Book publication date and 30 September of the following year. Subsequent changes will be made at the full annual rate.

## Non-National SPBE (i.e. all PB codes other than PB800 or PB801)

This is a SPDE listing which will appear in a specific Phone Book.

An annual charge for each SPBE listing will apply from the publication cut-off date for the Phone Book. CPs will be charged for Special Phone Book Entries during the month after the Phone book the entry appears in is published book.

SPBE Invoices

Invoices are raised monthly to the CP by BT Wholesale for any relevant SPBE charges.

Before the invoice is issued, the BT IP Exchange Customer Service team (Directory Team) will provide backup information (via email) to the CP for any SPBE charges.

Key Points to Note

CPs must ensure they obtain the necessary consent under the Data Protection Act 1998, the Privacy and Electronic Communications Regulations 2003, and any other relevant data protection statutes or regulations to enable them to supply Customer Directory Information to DMS.

CPs and BT will ensure that the management of directory information complies with the Data Protection Act 1998 and all other relevant regulation in the handling of customer data.

CPs must ensure that any customer directory information supplied to DMS is comprehensive, accurate, and up to date in accordance with its Customer’s requirements and that the Entry Type (DE, DQR, or XD/NC) is clearly marked. For more information about entry types please refer to the Manual Order pack.

BT will use best endeavours to ensure that the information provided by the CP is entered into DMS as accurately and completely as possible.

If BT receives a Data Subject Access Request (an individual exercises their right under the Data Protection legislation to see what data is held on DMS for them) BT will provide details of the directory listings held on DMS and will inform the CP at the earliest opportunity.

BT will remove any directory entry from DMS if the CP is unable to confirm and warrant that they are the owner of any trademarks, any copyright, or other related intellectual property rights

Due to the lifecycle of printed directories some customers’ directory entries may continue to be present in directories (phonebooks) for an 18 month period after the listing has been ceased from DMS. Similarly it may also be available in other directory enquiry facilities for a short period.

If BT receives a complaint or query relating to the data held on DMS, the details will be passed on to the CP to resolve and/or to provide updated directory information. Similarly if inaccurate data is identified as a result of a BT data cleanse exercise, details of erroneous listings will be provided to the CP so that they can provide correct updated information.

If a CP ceases to operate and is unable to update the data held on DMS, BT will either port the data to the Operators inheriting the subscribers concerned or exceptionally will cease the listings.

# Technical Details

Please refer to the Technical Description Handbook [Technical Description](https://www.btwholesale.com/pages/static/Products/Voice/IP_Exchange/handbookandtechnical.htm).

# Fault Handling and Repair

Customers will be able to report faults 24 hours a day, 7 days a week, 365 days a year (including UK Public and Bank Holidays) to the IP Exchange Customer Service Team on 0800 077 8247 option 2 (also works from outside of the UK).

Customers will have to complete the template [IP Exchange fault Reporting Template](https://www.btwholesale.com/assets/sc/documents/products-and-services/voice/ip-exchange/handbook-and-technical/bt-ip-exchange-fault-reporting-template-01b.xlsx) and then log a fault on the IPX Repair Portal, attaching the completed template. Guidance on how to arrange access to the portal can be found via: [IP Exchange Repair Portal User Guides](https://www.btwholesale.com/products-and-services/voice/ip-exchange.html#support-and-tools)



The process attached covers gaining access right through from btwholesale.com to the portal itself and also how to assign a ‘My Admin’ role, which if not in place already, will also need to be completed.

Any team members that are likely to raise a fault ticket, will need to have their own individual access to the Repair Portal. A group login account will not be possible.

If you experience any issues with the on-boarding process, please contact the system helpdesk in the first instance via email on [btwholesale.direct@bt.com](mailto:btwholesale.direct@bt.com).

The user guides on how to raise and track a fault can be found via the following link: [Raise or Track a trouble Ticket](https://www.btwholesale.com/products-and-services/voice/ip-exchange.html#support-and-tools)

The repair service desk will ensure that the CP has proven the fault away from their network before accepting the fault by requesting a call trace and full completion of the Structured Questions template –.  Failure to provide a complete template will result in the delay of fault resolution.

If the fault is proven to be on a network that is not BT’s i.e. a 3rd party CP, the repair desk has no jurisdiction to enforce action or a clear time from that 3rd party.

BT does not currently offer any SLA (Service Level Agreement) with this product. However, BT will endeavour to resolve major service impacting faults within 5 working hours and non-service impacting faults within 48 working hours.

The Customer Service Plan will provide contact and escalation points.

## Major Service Outages (MSOs)

In the event of a Major Outage on the IPX service, the normal fault reporting process should apply.

BT will however endeavour to proactively notify you of the incident and provide regular updates throughout the duration of the issue and where the issue is deemed serious, will provide a formal Post Incident Review (PIR) which can be obtained via the CPs account manager.

# Service Cessation

CPs can cease their entire service with IP Exchange by submitting a CRF reducing their port capacity to zero. CPs need to give a minimum of 30 working days’ notice to facilitate re-routing activity in the PSTN etc.

# Complaints handling

Any complaint regarding the IP Exchange service should in the first instance be directed to the helpdesk for resolution on 0800 077 8247 Option 1. Should a CP remain dissatisfied they should follow the escalation procedure detailed in their CSP (Customer Service Plan) at <https://www.btwholesale.com/pages/static/help-and-support/product-documentation.htm> (select Customer Service Plans, then Voice Service CSPs)

# Additional Information

IP Exchangeis not a PSTN emulation services and CPs should be aware that some PSTN features that are supported by ISUP signalling are not available with this product e.g. Malicious Call Trace

The following documentation is available at <https://www.btwholesale.com/pages/static/products-services/ip-exchange.htm#accProducts=2>

* Product Handbook
* Number Portability Handbook (for UK IP Exchange customers)
* Number Sub-Allocation Handbook (for UK IP Exchange customers)
* Technical Service Description
* Customer Service Plan (CSP)

The following documentation is available from your BT Account team:

* Customer Requirements Form
* Contract
* Pre-Test Description
* Forecasting Spreadsheet

# Glossary of Terms

|  |  |
| --- | --- |
| 21CN | 21st Century Network |
| AMR | Adaptive Multi-Rate speech encoding |
| BTWM | BT Wholesale Markets |
| CM | Commercial Manager |
| CNG | Comfort Noise Generator |
| CP | Communications Provider |
| CRE | Call routing Engine |
| DMA | Data Management Amendment |
| DNS | Domain Name Server |
| DSL | Digital Subscriber Line |
| DTMF | Dual Tones Multi Frequency |
| GSM | Global System for Mobile |
| IETF | Internet Engineering Task Force |
| IMS | Internet & Multimedia Services |
| IP | Internet Protocol |
| IPSec | IP Security protocol |
| ITU | International Telecommunications Union |
| LLU | Local Loop Unbundling |
| NGN | Next Generation Network |
| POLO | Payment to Other Licensed Operator |
| POP | Point Of Presence |
| PSTN | Public Switched Telephone Network |
| QoS | Quality of Service |
| RFC | Request for Comment |
| RTP | Real Time Protocol |
| SDIN | Session Distribution Interconnect Network |
| SIP | Session Initiation Protocol |
| SIP-I | Session Initiation Protocol - Interconnect |
| SCTP | Stream Control Transmission Protocol |
| SLA | Service Level Agreement |
| SRV | Service Record Value |
| TAM | Technical Account Manager |
| TCP | Transmission Control Protocol |
| TDM | Time Division Multiplexing |
| TLS | Transport Layer Security |
| TNO | Telecommunications Network Operator |
| UDP | User Datagram Protocol |
| URI | Universal Resource Indicator |
| VoIP | Voice over the Internet Protocol |