



# Hybrid Voice: Converged Data Sheet

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# 1. Introduction

## 1.1 Purpose

Converged Hybrid Voice is an ISDN30 service from Vodafone. This document describes the service and how it can be used by customers. Information contained in this document is supplementary to any information set out in the customer's contract with Vodafone and the provisions of the contract take precedence in the event of any conflict.

## 1.2 Hybrid Converged Access Voice product outline

Vodafone provides high quality, integrated services for customers' fixed and mobile data, voice and Internet requirements. Consolidate your fixed and mobile suppliers to reduce costs and simplify communications management. Your choice of provider today will have huge impact on your company's ability to exploit new communications tomorrow.

# 2. Product Description

## 2.1 Product Overview

Vodafone's Converged Hybrid Voice service provides direct connection to the Vodafone next generation IP network and offers all the sophisticated benefits of the Integrated Services Digital Networks (ISDN). ISDN is a switched digital network, conforming to internationally agreed standards, which can simultaneously transmit voice, data and image traffic over a common network interface.

A wide range of applications can now be added through the bandwidth-on-demand, pay-by-use benefits of Primary Rate ISDN which provide superior value and more effective management.

As well as the ISDN channels and network minutes, we can offer a full range of services from number ranges and number portability to paper phone directories and phone directory enquiries.

## 2.2 Product Definitions

### 2.2.1 Specifications

- Euro-ISDN signalling system (Q.931e)
- SIP trunks terminating in a router which has
- A SIP to ISDN30 converter

G.703 is an ITU-T recommendation covering digital transmission dealing with the physical interfaces.

Euro-ISDN signalling conforms to ETSI ETS 300 102 and ITU-T recommendation Q.931 and is often known as Q.931e.

Services will be delivered over an IP-VPN QoS connection which may be used for other services.

### 2.2.2 Primary Rate ISDN (PRI)

Primary Rate ISDN (PRI) is presented to the customer's equipment as an E1 2Mbit/s access connection. When fully equipped, this carries thirty 64kbit/s channels (B Channels) plus one 64kbit/s (D Channel) signalling channel. The 30 bearer channels provide the capacity to carry a variety of traffic whether voice, data or image, while the D channel allows signalling for call set-up and supplementary services on all the 30 B channels without affecting their throughput. If larger bandwidths are required, the 64kbit/s channels can be combined by using an inverse multiplexer.

These are converted to SIP at the customer's site using a converted card in the router that provides the IP-VPN service.

### 2.2.3 Signalling and call types

Using Vodafone's digital switched service to provide the connection to the customer's PBX's the 30-channel ISDN link uses Q.931 signalling which is supported by modern PBXs. This is sometimes also known as ISDN30e or Q.931e or Euro-ISDN.

Hybrid Converged Access Voice supports several ISDN call types – speech, 64kbits/s unrestricted data and 3.1kHz voice which is used for fax and modem traffic.

The maximum duration of an international call is 12 hours; calls that are still ongoing will be terminated after 12 hours.

The Vodafone network is dimensioned to allow a maximum number of Busy Hour Call Attempts (BHCA) and if you are using a dialer or other high frequency call devices, you need to discuss the calls per second (CPS) for your service with your account manager.

### 2.2.4 DDI features

By using Direct Dialling In (DDI), voice, data and video calls can be made directly to the user's desktop without the intervention of the PBX operator. Extensions with their own DDI numbers are still fully connected to the PBX, and calls on any line may be transferred to and from them as normal.

### 2.2.5 CLIP

Knowing who is on the other end of the line before you pick up the phone can give you a distinct advantage in many situations. Calling Line Identity Presentation (CLIP) is an optional service which allows the customer to receive the telephone number of the calling party for display. Suitable equipment displays the number of the person who is calling before you answer, giving you the power to decide whether to take the call or not.

The network delivers the calling line identity to the called party during call establishment, irrespective of the capability of the Customer's Premises Equipment to handle the information. In some cases the caller's Calling Line Identity will not be available if the service is not supported by overseas carriers of the relevant call.

### 2.2.6 CLIR

Calling Line Identity Restriction (CLIR) service enables the calling party to prevent the telephone number being sent to the called party. This restriction is ignored if the called party has CLIR override (usually only emergency services).

### 2.2.7 Call barring

Vodafone offer for the following call barring options.

- Premium (09xx and 087xx)
- International
- Directory enquiries
- Any combination of the above

## 2.3 Number porting

When you connect with us, you have the option to transfer, or 'port', your existing number to your new Vodafone service. Vodafone offers number portability for both Geographic and Non-Geographic numbers (0800, 0845, 0870, 090, etc).

Number portability works by a process known as 'Onward Routing'. Numbers are allocated to operators in blocks of 10,000, and it is not technically feasible to change the routing for individual numbers and parts of blocks; the number in question therefore remains on the original operator's network and is initially routed to that operator.

This operator, often referred to as the 'losing' or 'donor' operator, recognises that the number has been ported and forwards the call to the new operator, known as the 'recipient'. To successfully port a number both operators must have an agreement in place so the calls can be forwarded from the donor's network to the recipient's network.

## 2.4 Billing and i-View

Vodafone's billing platform provides fully itemised call reports and optional Call Detail Records to be available. Bills are associated with billing numbers and not with individual DDIs. The i-View online billing analysis tool is available to provide ad-hoc and regular reports and queries and can set up Cost Centres etc. Full details of i-View are available from your Account Manager.

## 2.5 Resilience and business continuity

There are a number of continuity options customers can take to protect the service on their sites or network end point. As each customer situation would be different, please discuss the specific requirements with your account manager.

## 2.6 General

Vodafone, when requested to do so by the customer, will provide customer details to BT for entry into BT's UK phone books and general directory enquiry services. BT is obliged to make this information available to other Directory Enquiry service providers. (For information most, if not all, telephone 118 services use BT's OSIS database as the basis of their services.) Phone book entries are a chargeable option.

Phone book/ directory enquiry listing are available with 3 options:

- Full directory entry (DE) – details are listed and available within all Directory Enquiry products provided from the BT database.
- Directory Enquiries Only (DQR) – details are removed from the printed phone books, but are available on Directory Enquiry services. This option prevents disclosure of the customer's address.
- Ex-Directory (XD) – details are not available or published within paper directories, and are not available from directory enquiries.

### 2.6.1 Directory entries

All customers receive one directory entry in ordinary type in their Local/ Home phone book per location. Customers may also include a 3-word business description in their entry. There is a charge for any other entry requirements, Bold/ Superbold type entries and additional entries. If BT accepts the customer's application for a special/ additional entry, the following conditions apply:

- a) The entry will appear in the next issue of the telephone directory.
- b) Rental for the entry is payable on the first day of the month of its publication.
- c) Either BT or the customer/Vodafone may at any time give to the other written notice to withdraw the entry.
- d) If the customer cancels the entry, or ceases the exchange line to which the special entry applies, he/she may be liable for charges until the first day of the month of the next issue's publication, up to a maximum of six quarterly rental payments.

### 2.6.2 Telephone directory enquiries (118 xxx)

Vodafone allows access to 118 services. A full retail tariff is available.

### 2.6.3 Paper directories

Vodafone can provide copies of the BT paper directories (The Phone Book) on request. There is a charge per book. They can be ordered for any, and as many, areas as are required. Copies of the BT Phone Book Companion can also be supplied, at a charge.