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The BIDIC service

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0. Document history

Every update of this document results in a complete new version with new version number and release date.

Version	Date	Main or important changes since previous version
1.0	09 MAY 2002	<ul style="list-style-type: none">• First version

1. Introduction

The present document specifies the interface, transmission characteristics and protocol specifications of the BIDIC (Belgacom's ISDN D-channel IP connectivity) service.

The BIDIC service offers a permanent connectivity (AO – Always On) via the ISDN D-channel at an average speed of 8 kbps. One ISDN B-channel can be added on demand (DI – Dynamic ISDN).

Only IP is supported as network layer protocol. Other protocols (IPX, ...) are not tested.

The BIDIC network does not contain a Domain Name Server.

The BIDIC network does not contain a Time Server.

2. Symbols, definitions and abbreviations

For the purpose of the present document, the following definitions apply:

BILAN	Belgacom's Interconnection of Local Area Networks
ISDN	Integrated Services Digital Network
BIDIC	Belgacom's ISDN D-channel IP Connectivity
VPN	Virtual Private Network
LAN	Local Access Network
AO/DI	Always On/Dynamic ISDN

3. The reference model

This specification describes 2 interfaces:

- The UNI #1 is the Ethernet port on the AO/DI router at the remote site
- The UNI #2 is a physical or logical port on the router at the central site

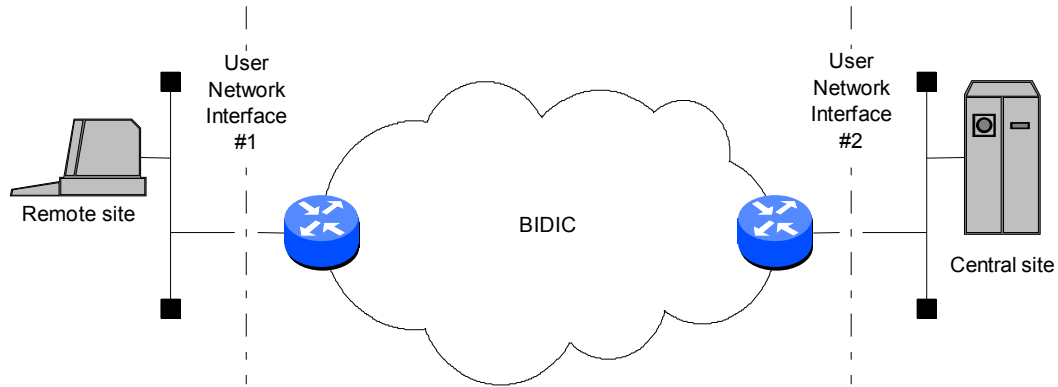


Figure 1: Belgacom BIDIC service - UNI reference model

4. The BIDIC Virtual Private Network

The BIDIC service allows a user to create a VPN across a number of remote sites, connected to the ISDN and a central site, connected to Belgacom's BILAN or IP/VPN. All sites can communicate with each other.

A remote site can be a member of several VPNs. The user must manage the access from one VPN to another VPN via the LAN of a remote site.

4.1. Addressing plan

Every site has a LAN to which one or more IP terminals can connect. The user must specify an overall IP addressing plan. Any type of IP address (class A, class B or class C) can be used, except one range that is internally used by the network.

Every terminal has a fixed IP address. No DHCP service is offered.

The central site has always an IP subnet. Two addressing schemes are supported for the remote sites:

4.1.1. Remote site has an IP address

Every remote site has exactly one host. All hosts are member of the same subnet via Network Address Translation (NAT). The physical addressing of every remote site is identical, but invisible from the other sites.

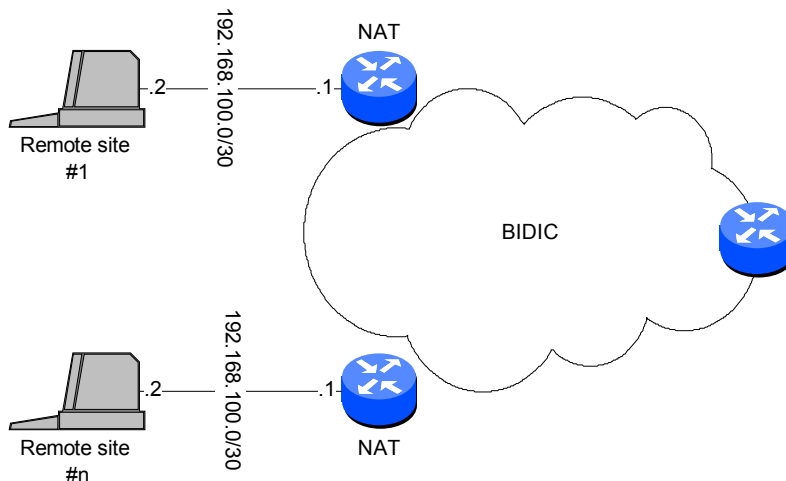


Figure 2: Consecutive numbering scheme

4.1.2. Remote site has an IP subnet

Every remote site has a subnet with one or more hosts. The subnets of all remote sites constitute together an IP network.

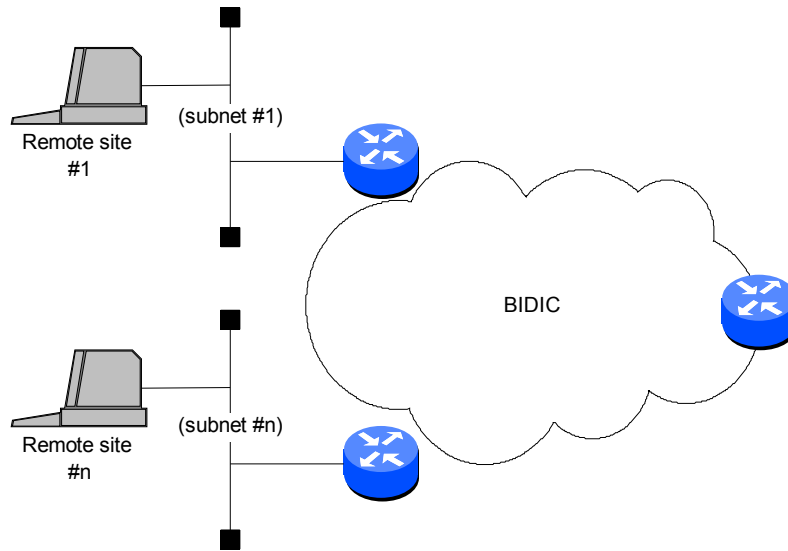


Figure 3: Numbering scheme with gaps

5. The remote site interface

The User-Network interface at the remote site is the 10BASE-T Ethernet port on the AO/DI router. At least one RJ-45 port can be configured in hub mode or in PC mode.

The user must provide power for the AO/DI router according to the specifications below:
230 V ~50 Hz, 26 W

6. The central site interface

Two types of central site configurations are offered:

- A BIDIC site is directly connected to the BIDIC network
- An IP/VPN site is connected to the IP/VPN network (BIDIC and IP/VPN are interconnected)

6.1. BIDIC site

The user-network interface is a BILAN connection. The central router is installed and configured by Belgacom.

6.2. IP/VPN site

The user-network interface is an IP/VPN connection.

7. Optional features

7.1. Bandwidth management

The BIDIC service guarantees a permanent IP connection at a maximal speed of 8 kbps via the D-channel of an ISDN line. This speed can temporarily be boosted to 64 kbps by adding an ISDN B-channel. The following triggers can be defined:

Action	Trigger
Open B-channel	Open UDF or TCP port #x
Close B-channel	Time-out on minimum B-channel occupation

7.2. Multicast

The BIDIC network can be configured to support multicasting via class-D IP addresses.