



- 100Base-T** Twisted Pair connection, Fast Ethernet. Network connection for 100-Mbps networks.
- 10Base-2** Thin Ethernet Kabel. Network connection for 10-Mbps networks with BNC connector. T-connectors are used for the connection of equipment with BNC sockets.
- 10Base-T** Twisted Pair connection. Network connection for 10-Mbps networks >>> [RJ45](#) connector.
- 3DES (Triple DES)** See >>> [DES](#).
- 1TR6** D-channel protocol used in the German ISDN. Today the more common protocol is >>> [DSS1](#).
- Access list** A rule that defines a set of packets that should or should not be transmitted by the gateway.
- Access Point** An active component of a network that consists of wireless and additionally of wired components if applicable. Several WLAN clients can register at an access point (AP) and can thus exchange data via the AP. If optionally a wired Ethernet is connected, the signals between the two physical media, the wireless interface and the wired interface, are bridged (Bridging).
- Accounting** Recording of connection data, e.g. date, time, connection duration, charging information and number of data packets transferred.
- Active Probing** Per default access points answer requests of a client. This function is also applied with Active Probing, where clients send probe requests on all channels and wait for a nearby access point to reply. The access point answers with its SSID of the wireless LAN and if WEP encryption is used.
- ADSL** Asymmetric >>> [Digital Subscriber Line](#)
- The data rate is up to 640 kbps >>> [upstream](#) and 1.5 - 9 Mbps >>> [downstream](#) over ranges of up to 5.5 km (ITU-T standard >>> [G.992.1](#)).
- The main ADSL applications are: Internet access, video-on-demand (digital and compressed) and high speed data transfer.
- AH** Authentication Header
- One of the two principal IPSec protocols, used for authentication only, Data encryption is not supported.



**ARP** Address Resolution Protocol

ARP belongs to the >> **TCP/IP protocol family**. ARP resolves IP addresses into their corresponding >> **MAC addresses**.

**Asynchronous transmission** A method of data transmission in which the time intervals between transmitted characters can vary in length. This allows computers and peripheral devices to intercommunicate without being synchronized by clock signals. The beginning and end of the transmitted characters must be marked by start and stop bits – in contrast to >> **synchronous transmission**.

**ATM** Asynchronous Transfer Mode

The ATM technology can be used to implement switched, connection-based LANs and WANs. It permits a theoretically unlimited number of high speed leased lines dedicated to network users for use between users and to servers. ATM is based on fast cell switching, which allows variable bit rates and supports different types of data traffic, such as voice, video and data.

**BACP/BAP** Bandwidth Allocation Control Protocols (BACP/BAP according to RFC 2125)

A protocol used for bandwidth management. BACP/BAP manages adding or dropping B-channels. BAP uses three different requests, to manage changes in bandwidth allocation: Call Request, Callback Request and Link Drop Request.

**B-channel** A bearer channel of an >> **ISDN Basic Rate Interface** or a >> **Primary Rate Interface** for the transmission of traffic (voice, data). An ISDN Basic Rate Interface consists of two B-channels and one >> **D-channel**. A B-channel has a data transmission rate of 64 kbps.

The data transmission rate of an ISDN Basic Rate Interface with your router can be increased to up to 128 kbps using >> **channel bundling**.

**Block Cipher Modes** Block ciphers take a fixed-size block of data (usually 64 bits), and transform it to another block of the same size using a function selected by the key.

**Blowfish** An algorithm developed by Bruce Schneier. It is a block cipher with a 64-bit block size and variable length keys (up to 448 bits).

**BOD** Bandwidth on Demand

Bandwidth on Demand is an extended method of >> **channel bundling**, in which it is also possible to connect >> **dialup connections** to >> **leased lines** or to configure dialup connections as a backup facility for leased lines.

**BootP** Bootstrap protocol

Based on >> **UDP** or >> **IP protocol**. Automatically assigns an >> **IP address**. **DIME Tools** contain a BootP server that you can start on your PC to assign the as yet unconfigured router an IP address.

**Bridge** Network components for connecting homogeneous networks. As opposed to a >> **router**, bridges operate at layer 2 (data link layer) of the >> **OSI model**, are independent of higher-level protocols and transmit data packets using >> **MAC addresses**. Data transmission is transparent, which means the information contained in the data packages is not interpreted.

Bridges are used to physically decouple networks and to reduce network data traffic. This is done by using filter functions that allow data packets to pass to certain network segments only.

Some bintec routers can be operated in Bridging Mode.

**Broadcast** Broadcasts (data packages) are sent to all stations in a network in order to exchange information. Generally, there is a certain address (broadcast address) in the network that allows all stations to interpret a message as a broadcast.

**Bus** A data transmission medium for use by all the devices connected to a network. Data is forwarded over the entire bus and received by all devices on the bus.

**CA** Certificate Authority

See >> **Certificate**.

**Called party number** Number of the terminal called.

**Calling party number** Number of the calling terminal.

**CAPI** Common ISDN Application Programming Interface

A software interface standardized in 1989 that allows application programs to access ISDN hardware from the PC. Most ISDN-specific software solutions work with the CAPI interface. Such communications applications enable you, for example, to send and receive faxes or transfer data over the ISDN from your PC. See also >> **Remote CAPI**.



**CAST** A 128-bit encryption algorithm whose operation is similar to DES. See [▶▶ Block Cipher Modes](#).

**CBC** Cipher Block Chaining

A plaintext block is combined with the encryption result of the previous block and the resulting value is encrypted. This procedure requires an Initialization Vector (IV) for the first block. See [▶▶ Block Cipher Modes](#).

**Certificate** A certificate identifies someone or something, an individual, a company, or an application. The certificate associates that identity with a public key. Public-key certificates are data blocks which provide a safe method of distributing public keys. Public-key certificates are certified by an issuing organization called a certification authority (CA).

**CCITT** Consultative Committee for International Telegraphy and Telephony

A predecessor organization of the [▶▶ ITU](#) that passed recommendations for the development of communications standards for public telephony and data networks and data transmission interfaces.

**Channel bundling** Channel bundling

Function of your router. Channel bundling is a method of increasing the data throughput. The data throughput is doubled by switching in a second [▶▶ B-channel](#) for data transmission. Channel bundling can be either dynamic (= on demand) or static (= always).

**CHAP** Challenge Handshake Authentication Protocol

A security mechanism during the establishment of a connection with a [▶▶ WAN partner](#) using [▶▶ PPP](#). This protocol is used for checking the WAN partner name and the password defined for the WAN partner. If the partner name and password at both ends are not the same, a connection is not set up. The user name and password are encoded in CHAP before they are sent to the partner – as opposed to [▶▶ PAP](#).

**CLID** Calling Line Identification



A security mechanism during the establishment of a connection with a **➤➤ WAN partner**. A caller is identified by means of his ISDN extension number before the connection is established. If the extension number is not the same as the extension number you have defined for a WAN partner, a connection is not established.

**Client** A client uses the services provided by a **➤➤ server**. Clients are usually workstations.

**Configuration Manager** Windows application (similar to the Windows Explorer), which uses SNMP commands to request and carry out the settings of your router. The application was called the **➤➤ DIME Browser** before **BRICKware** version 5.1.3.

**Data compression** A process for reducing the amount of data transmitted. This enables higher throughput to be achieved in the same transmission time. Examples of this technique include **➤➤ STAC**, **➤➤ VJHC** and **➤➤ MPPC**.

**Datagram** A self-contained **➤➤ data packet** that is forwarded in the network with minimum protocol overhead and without an acknowledgment mechanism.

**Data packet** A data packet is used for information transfer. Each data packet contains a prescribed number of characters (information and control characters).

**DCE** Data Circuit-Terminating Equipment

Data Circuit-Terminating Equipment (see **➤➤ V.24**)

**D-channel** Control and signaling channel of an **➤➤ ISDN Basic Rate Interface** or **➤➤ Primary Rate Interface**. The D-channel has a data transmission rate of 16 kbps. In addition to the D-channel, each ISDN BRI has two **➤➤ B-channels**.

**DCN** Data communications network

**Denial-Of-Service Attack** A Denial-of-Service (DoS) attack is an attempt to flood a router or a host in a LAN with forged requests so that it is completely overloaded. This means, the system or a certain service can no longer be used.

**DES** Data Encryption Standard

A **➤➤ block cipher** with 64-bit block size. It uses 56-bit keys. A safer variant of DES, Triple-DES or 3DES is based on using DES three times (i.e. encrypt-decrypt-encrypt sequence with either two or three different, unrelated keys).

**DHCP** Dynamic Host Configuration Protocol



A Microsoft protocol that provides a mechanism for dynamic assignment of >> **IP addresses**. A DHCP server allocates each >> **client** in a network an IP address from a defined address pool compiled by the system administrator. Prerequisite: >> **TCP/IP** must be configured at the clients so that they can request their IP address from the server. Your bintec router can be used as a DHCP server.

**Dialup connection** A connection is set up when required by dialing an extension number, in contrast to a >> **leased line**.

**DIME** Desktop Internetworking Management Environment

**DIME Tools** are a collection of tools for configuration and monitoring of routers over Windows applications. They are included with all bintec routers free of charge.

**DIME Browser** Old name for >> **Configuration Manager**.

**Direct dialing range** See >> **extension numbers range**

**DMZ** DeMilitarized Zone

This is a separate network located between the internal LAN and the Internet. The DMZ is more trustworthy than the Internet, but the DMZ computers do not receive the same rights as the computers in the internal LAN. The DMZ is the place for all services that have to make direct contact with the Internet. If a Web or mail server is attacked, this has no effect on the security of your internal network.

**DNS** Domain Name System

Each device in a >> **TCP/IP network** is usually located by its >> **IP address**. Because >> **host names** are often used in networks to reach different devices, it is necessary for the associated IP address to be known. This task can be performed by a DNS server, which resolves the host names into IP addresses. Alternatively, name resolution can also take place over the HOSTS file, which is available on all PCs.

**DOI** Domain Of Interpretation

The DOI for IPSec specifies all the parameters associated with the ISAK-MP/Oakley protocols, and assigns them unique identifiers.



**Domain** A domain refers to a group of devices in a network, whose host names share a common suffix, the domain name. Thus, in the **Internet**, a part of a naming hierarchy (e.g. bintec.net).

**Downstream** Data transmission rate from the **ISP** to the client.

**DSA (DSS)** Digital Signature Algorithm (Digital Signature Standard). A signature-only mechanism supported by the United States government. Its design criteria have not been made public. Regarding key generation, DSA is faster than RSA. On the other hand, regarding key computation, DSA is slower than RSA.

**DSL/xDSL** Digital Subscriber Line

Data transmission technique that enables high transmission rates to be achieved on normal telephone lines.

The data rate is dependent on the distance to be covered and the quality of the line.

xDSL is used as a bookmark for the different DSL variants, such as **ADSL**, **RADSL**, **VDSL**, **HDSL**, **SDSL**, **U-ADSL**, etc., which are part of the family of DSL techniques.

**DSS1** Digital Subscriber Signalling System.

A common D-channel protocol used in the Euro ISDN.

**DTE** Data Terminal Equipment

Data Terminal Equipment (see **V.24**)

**DTMF** Dual Tone Multi Frequency (tone dialing system)

Dialing method for telephony systems. In this method, pressing a key on the telephone keypad generates two simultaneous tones, which are correspondingly evaluated by the PABX or exchange.

**E1/T1** E1: European variant of the 2.048 Mbps **ISDN Primary Rate Interface**, which is also called the E1 system.

T1: American variant of the ISDN Primary Rate Interface with 23 basic channels and one D-channel (1.544 Mbps).

**EAZ** Terminal Selection Digit



Is only used in the >> **1TR6** system and designates the last digit of an extension number. It is used for dialing various terminals connected to the ISDN Basic Rate Interface (e.g. fax). This occurs by attaching one digit between 0 and 9 to the actual ISDN telephone number. In Euro ISDN (DSS1), the complete extension number, >> **MSN**, is transferred instead of the EAZ.

**ECB** Electronic Code Book mode

If the same block is encrypted twice with the same key, the resulting ciphertext blocks are the same. See >> **Block Cipher Modes**.

**Encapsulation** Encapsulation of >> **data packets** in a certain protocol for transmitting the packets over a network that the original protocol does not directly support (e.g. NetBIOS over TCP/IP).

**Encryption** Refers to the encoding of data, e.g. >> **MPPE**.

**ESP** Encapsulating Security Payload

One of the two principal IPSec protocols, supporting data encryption as well as authentication.

**Ethernet** A local network that connects all devices in the network (PC, printers, etc.) via a twisted pair or coaxial cable.

**Extension** An extension is an internal number for a terminal or subsystem. In >> **point-to-point ISDN accesses**, the extension is usually a number from the >> **extension numbers range** assigned by the telephone provider. In point-to-multipoint connections, it can be the MSN or a part of the MSN.

**Extension numbers** (direct dialing range)

**range**

A >> **point-to-point ISDN access** includes a >> **PABX number** and an extension numbers range. The PABX number is used to reach the PABX. The extension numbers range is a group of numbers used for selecting terminals within the >> **PABX**.

**Filters** A filter comprises a number of criteria (e.g. protocol, port number, source and destination address). These criteria can be used to reject a packet from the traffic flow. Such a packet can then be handled in a specific way. For this purpose, a certain action is associated with the filter, which creates a filter rule.



**Firewall** Designates the whole range of mechanisms to protect the local network against external access. Your router provides protection mechanisms such as [▶▶ NAT](#), [▶▶ CLID](#), [▶▶ PAP/CHAP](#), access lists, etc.

**FTP** File Transfer Protocol  
A TCP/IP protocol used to transfer files between different hosts.

**G.991.1** Data transmission recommendation for [▶▶ HDSL](#)

**G.991.2** Data transmission recommendation for [▶▶ SHDSL](#)

**G.992.1** Data transmission recommendation for ADSL: ITU-T G.992.1

See also [▶▶ G.992.1 Annex A](#) and [▶▶ G.992.1 Annex B](#).

**G.992.1 Annex A** Data transmission recommendation for ADSL: ITU-T G.992.1 Annex A

Annex A of the recommendation describes the transmission of ADSL data over POTS lines [▶▶ upstream](#) in the frequency range from 25 kHz to 138 kHz and [▶▶ downstream](#) from 138 kHz to 1104 kHz. Annex A is used mainly in countries in which ISDN is not widespread, e.g. France. The bintec **X2300** router supports this recommendation.

**G.992.1 Annex B** Data transmission recommendation for ADSL: ITU-T G.992.1 Annex B

Annex B of the recommendation describes the transmission of ADSL data over ISDN lines [▶▶ upstream](#) in the frequency range from 138 kHz to 276 kHz and [▶▶ downstream](#) from 276 kHz to 1104 kHz. The bintec **X2300i** and **X2300is** routers support this recommendation.

**Gateway** Entrance and exit, transition point

Component in the local network that offers access to other networks, also offers transitions between different networks, e.g. [▶▶ LAN](#) and [▶▶ WAN](#).

**G.SHDSL** See [▶▶ G.991.2](#) and [▶▶ SHDSL](#)

**hashing** The process of deriving a number, called a hash, from a string of text. A hash is usually much smaller than the text stream from which it originated. The hashing algorithm is designed to generate the hash with a very low probability that hashing a different meaningful text string might generate an identical hash value.

Encryption devices use hashing to ensure that intruders have not modified transmitted messages.

**HDSL** High Bit Rate >> **DSL**

The >> **upstream** and >> **downstream** data rates are: for >> **T1** 1.554 Mbps and for >> **E1** 2.048 Mbps over ranges up to 4 km. Data transfer is performed using one, two or three wire pairs.

Since HDSL occupies the baseband, no baseband services like >> **ISDN** or >> **POTS** can be offered using the same line. The primary application of HDSL is high speed data transfer over leased lines.

**HDSL2** High Bit Rate >> **DSL**, version 2

The >> **upstream** and >> **downstream** data rate is 1.554 Mbps over ranges up to 4 km. Data transfer is performed using a single wire pair.

Since HDSL2 occupies the baseband, no baseband services like >> **ISDN** or >> **POTS** can be offered using the same line. The primary application of HDSL2 is high speed data transfer over leased lines.

**HMAC** Hashed Message Authentication Code

A message authentication mechanism that uses cryptographic hashing functions such as MD5 and SHA-1, in combination with a shared secret key. HMAC allows easy replacement of the underlying hashing function, as when security requirements change or when faster or more secure hashing functions become available.

**HMAC-MD5** Hashed Message Authentication Code - using Message Digest version 5 algorithm.

**HMAC-SHA1** Hashed Message Authentication Code - using Secure Hash Algorithm version 1

**Host name** A name used in >> **IP networks** instead of the corresponding >> **IP address**. A host name consists of an ASCII string that uniquely identifies the host computer.

**Hub** Network component used to connect several network components together to form a local network (star-shaped).

**ICMP** Internet Control Message Protocol

An extension to the Internet Protocol (>> **IP**), which permits IP-based error messages, test packets and information messages. Defined in STD 5, RFC 792.



**ICV** Integrity Check Value

Usually an HMAC algorithm using Message Digest 5 (MD5) or SHA-1 hash functions checks if data has been modified.

**IETF** Internet Engineering Task Force

**Internet** The Internet consists of a range of regional, local and university networks. The **>>> IP protocol** is used for data transmission in the Internet.

**IP** Internet Protocol

One of the **>>> TCP/IP** suite of protocols used for the connection of Wide Area Networks (**>>> WANs**).

**IP address** The first part of the address by which a device is identified in an IP network, e.g. 192.168.1.254. See also **>>> netmask**.

**IPComP** IP payload compression

IPComP is a protocol to reduce the size of IP datagrams. This protocol will increase the overall communication performance between a pair of communicating hosts/gateways ("nodes") by compressing the datagrams, provided the nodes have sufficient computation power, through either CPU capacity or a compression coprocessor, and the communication is over slow or congested links.

**IPoA** IP over ATM

IPoA enables IP data packets to be transported directly over an **>>> ATM** network (RFC 2684).

**ISDN** Integrated Services Digital Network

The ISDN is a digital network for the transmission of voice and data. There are two possible subscriber connections for ISDN, the **>>> ISDN Basic Rate Interface** and the **>>> Primary Rate Interface**. ISDN is an international standard. For ISDN protocols, however, there is a range of variations.

**ISDN Basic Rate Interface** An ISDN subscriber interface. The Basic Rate Interface consists of two **>>> B-channels** and a **>>> D-channel**. Compare **>>> Primary Rate Interface**.

The interface to the subscriber is provided by an **>>> S0 bus**.

**ISDN BRI** ISDN Basic Rate Interface

➤➤ **ISDN Basic Rate Interface**, also ➤➤ **S0 interface**.

**ISDN Login** Function of your router. Your router can be configured and administrated remotely using ISDN Login. ISDN Login operates on routers in the ex works state as soon they are connected to an ISDN connection and therefore reachable via an extension number.

**ISDN PRI** ISDN Primary Rate Interface

ISDN ➤➤ **Primary Rate Interface**, also ➤➤ **S2M interface**.

**ISO** International Standardization Organization

An international organization for the development of world-wide standards, e.g. ➤➤ **OSI model**.

**ISP** Internet Service Provider

Allows companies or private individuals access to the Internet.

**ITU** International Telecommunication Union

International organization that co-ordinates the construction and operation of telecommunications networks and services.

**Key Escrow** Escrowed keys can be accessed by the government. Particularly the US government establishes key escrows to handle the problem that criminals could hide their criminal acts by encrypting their data.

**LAN** Local Area Network

A network covering a small geographic area and controlled by its owner. Usually within the confines of a building or corporate center.

**Layer 1** Layer 1 of the ➤➤ **ISO OSI Model**, the bit transfer layer.

**LDAP** Lightweight Directory Access Protocol

LDAP is a lightweight version of the X.500 client access Directory Access Protocol (DAP), which specifies how a client accesses a directory server. LDAP was defined by the IETF in order to encourage adoption of X.500 directories. LDAP defines a relatively simple protocol for updating and searching directories running over TCP/IP (default port is 389).

**Leased line** Leased line



Fixed connection to a subscriber. In contrast to a **>> dialup connection**, neither an extension number nor connection setup or clearing is necessary.

**MAC address** Every device in the network is defined by a fixed hardware address (MAC address). The network card of a device defines this internationally unique address.

**Man-in-the-Middle Attack** Public key encryption presupposes the exchange of the public encryption keys. During this exchange, the unprotected keys could be easily intercepted and open the possibility of the "man-in-the-middle" attack. The attacker could plant his or her own key early in the process so actually a key known to the "man-in-the-middle" would be used instead of the party's key you believed to communicate with.

**MD5** See **>> HMAC-MD5**.

**MIB** Management Information Base  
The MIB is a database that describes all the manageable devices and functions connected to a network. All MIBs (including the bintec MIB) contain objects specific to the manufacturer. **>> SNMP** is based on MIB.

**Modem** Modulator/Demodulator  
An electronic device used to convert digital signals to analog tone signals and vice versa, so that data can be transmitted in an analog medium.

**MPPC** Microsoft Point-to-Point Compression  
**>> data compression** procedure for

**MPPE** Microsoft Point-to-Point Encryption  
Data encryption process.

**MSN** Multiple Subscriber Number  
Multiple number for an ISDN BRI in Euro ISDN. The MSN is the extension number that permits a terminal to be addressed specifically on the **>> S<sub>0</sub> bus** in Euro ISDN. An MSM has up to eight digits. (For example, in the number 49 911 7654321, the MSN is 7654321.)  
Usually three such MSNs are assigned to each ISDN BRI (point-to-multipoint connection) in Germany.

**MSSID** see **>> SSID**



**Multiprotocol router** A [»» router](#) that can route several protocols, e.g. [»» IP](#), [»» X.25](#), etc.

**NAT** Network Address Translation

Security mechanism of your router. Using NAT conceals your complete network to the outside world. The IP addresses of all devices in your own network remain confidential, only one IP address is made known for connections to the outside.

**NetBIOS** Network Basic Input Output System

A programming interface that activates network operations on a PC. It is a set of commands for transmitting and receiving data to and from other Windows PCs on the network.

**Netmask** The second part of an address in an IP network, used for identification of a device, e.g. 255.255.255.0. See also [»» IP address](#).

**Network address** A network address designates the address of a complete local network.

**NT** Network Termination

An NT adapter is the network termination unit of an [»» ISDN](#) connection. In Germany, this is obtained from Deutsche Telekom AG. It is used to connect a private network ([»» S<sub>0</sub> bus](#)) to the public ISDN network. It is equivalent to the terminal socket used for connecting an analog telephone.

**NTBA** Network Termination for Basic Access.

An NTBA adapter is the network termination unit of an [»» ISDN](#) Basic Rate Interface. In Germany, this is obtained from Deutsche Telekom AG. It is used to connect a private network ([»» S<sub>0</sub> bus](#)) to the public ISDN network. It is equivalent to the terminal socket used for connecting an analog telephone.

**OAM** Operation and Maintenance

Monitor functions for the administrator of the [»» ADSL](#) line.

**OSI model** OSI = Open Systems Interconnection

[»» ISO](#) reference model for networks. Defines interface standards between computer manufacturers for software and hardware requirements.



**OSPF** Open Shortest Path First

Routing protocol used in networks to exchange information (routing tables) between >> **routers**.

**PABX** Private Automatic Branch Exchange

An ISDN PABX is a telephone exchange with >> **S0 interface** and >> **1TR6** or other manufacturer-specific >> **D-channel protocols** on the subscriber side.

Exchanges allow internal connections between the PABX extensions without the need to connect to the telephone service provider. Not all bintec routers contain an exchange.

An ISDN PABX is used to set up an internal telephone infrastructure. Both analog terminals (e.g. fax, modem) and digital terminals can be connected to a PABX. The internal network provides free telephoning and connection switching. The individual terminals are given different extension numbers.

**PABX number** A point-to-point ISDN access includes a PABX number and an >> **extension numbers range**. The PABX number is used to reach the PABX. A certain terminal of the >> **PABX** is then dialed via one of the numbers of the extension numbers range.

**PAP** Password Authentication Protocol

Authentication process for connecting over >> **PPP**. Functions like >> **CHAP**, except that the user name and password are not encoded before being transmitted to the partner.

**PGP** Pretty Good Privacy

A cryptographic authentication scheme typically used by internet e-mail users to authenticate the identity of the sending party, and the integrity of their message.

**PKCS** Public-Key Cryptography Standards

The PKCS are a set of standards for public-key cryptography. The PKCS are designed for binary and ASCII data and are also compatible with the ITU-T X.509 standard. The published standards are PKCS #1, #3, #5, #7, #8, #9, #10, #11, #12, and #15. PKCS #10 describes syntax for certification requests.



**Ping** Packet Internet Groper

Command that can be used to determine the range to remote network components. Ping is also used for test purposes to determine if the remote device can actually be reached at all.

**Point-to-multipoint** Point-to-multipoint

Feature of a connection that is permanently connected between three or more data stations or set up via switching systems.

**Point-to-multipoint connection** Point-to-multipoint (➤➤ **Point-to-multipoint**)

Several different terminals can be connected to a point-to-multipoint connection. The individual terminals are addressed via certain extension numbers (➤➤ **MSNs**).

**Point-to-point** Point-to-point

Feature of a connection between two data stations only. The connection can be permanently switched or set up via switching systems.

**Point-to-point ISDN access** Point-to-point (➤➤ **point-to-point**)

**cess**

A point-to-point ISDN access is used for the connection of a ➤➤ **PABX**. The PABX can forward calls to a number of terminals. A point-to-point access includes a ➤➤ **PABX number**, via which the PABX is reached from outside and a group of numbers (➤➤ **extension numbers range**), with which the terminals connected to the PABX can be dialed.

**Port** Input/output

The port number is used to decide to which service (telnet, WWW) an incoming data packet should be sent.

**POTS** Plain Old Telephone System

The traditional analog telephone network.

**PPP** Point-to-Point Protocol

A protocol suite for authentication of the connection parameters of a ➤➤ **point-to-point connection**. PPP is used to connect local networks over the ➤➤ **WAN**. Multiprotocol packets are encapsulated (➤➤ **encapsulation**) in a



standard format before transmission. Establishing a connection involves a number of other components and subprotocols, such as the authentication mechanisms >> **PAP/CHAP**.

**PPP authentication** Security mechanism. A method of authentication using passwords in >> **PPP**.

**PPPoA** Point to Point Protocol over Ethernet >> **ATM**

The PPP-over-ATM (PPPoA) protocol enables PPP data packets to be transported directly over an ATM network (RFC 2364).

**PPPoE** Point to Point Protocol over Ethernet

The PPP-over-Ethernet (PPPoE) protocol permits Internet access over Ethernet via an >> **xDSL** modem or xDSL router (RFC 2516).

**Primary Rate Interface (PRI)** An ISDN subscriber interface. The PRI consists of a D-channel and 30 B-channels (in Europe). (In America: 23 B-channels and a D-channel.) Compare >> **ISDN Basic Rate Interface**.

**Protocol** Protocols are used to define the manner and means of information exchange between two systems. Protocols control and rule the course of data communication at various levels (decoding, addressing, network routing, control procedures, etc.).

**Proxy ARP** ARP = Address Resolution Protocol

Process used to determine the associated >> **MAC address** for a host whose >> **IP address** is known.

**RADSL** Rate-Adaptive >> **Digital Subscriber Line**

The data rate is up to 640 kbps >> **upstream** and 1.5 - 9 Mbps >> **downstream** over ranges of up to 18.5 km.

The main RADSL applications are: Internet access, video-on-demand (digital and compressed) and high speed data transfer.

**Real Time Clock (RTC)** Hardware clock with buffer battery

**Remote** Remote, as opposed to local.

If a far station is not located in your own local network (LAN), but in another LAN, this is referred to as remote.



This LAN must be connected to the local LAN over a WAN connection (over your router).

**Remote access** Opposite to local access, see >> **Remote**.

**Remote CAPI** bintec's own interface for >> **CAPI**.

The Remote CAPI interface enables all subscribers of a network to use CAPI services, but over your router to a single ISDN connection. All subscribers must have the corresponding application software installed to support the CAPI interface. This standard interface is, however, used by most communications applications.

The bintec CAPI interface is implemented as a dual-mode CAPI. CAPI 1.1 and 2.0 applications can access ISDN resources parallel to one another. This means new CAPI 2.0 applications can be used on the network or on the same PC parallel to old applications based on CAPI 1.1.

**Rijndael (AES)** Rijndael (AES) has been chosen as AES for its quick key setup, low memory requirements and for its high security against attacks. For more information about the AES, see <http://csrc.nist.gov/encryption/aes>.

**RipeMD 160** RipeMD 160 is a 160-bit cryptographic hash function. It is intended to be used as a more secure replacement for MD5 and RipeMD.

**RIP** Routing Information Protocol

Routing protocol used in networks to exchange information (routing tables) between >> **routers**.

**RJ45** Plug or socket for maximum eight wires. Connection for digital terminals.

**Router** A device that connects different networks at layer 3 of the >> **OSI model** and routes information from one network to the other.

Routers are able to recognize blocks of information and evaluate addresses (as opposed to a >> **bridge**, which operates with a transparent protocol). The best paths (routes) from one point to another are chosen by using routing tables. In order to keep the routing tables up to date, routers exchange information between themselves via routing protocols (e.g. >> **OSPF**, >> **RIP**).

Modern routers like your router are >> **multiprotocol routers** and thus capable of routing several protocols (e.g. IP and X.25).



**RSA** The RSA (named after its inventors Rivest, Shamir, Adleman) algorithm is based on the fact that there is no efficient way to factor very large numbers. Deducing an RSA key, therefore, requires an extraordinary amount of computer processing power and time.

RSA Signature provides non-repudiation for authentication, RSA Encryption provides for confidentiality

**S<sub>0</sub> bus** All ISDN sockets and the **NTBA** of an ISDN point-to-multipoint connection. All S<sub>0</sub> buses consist of a four-wire cable. The lines transmit digital ISDN signals. The S<sub>0</sub> bus is terminated with a terminating resistor after the last ISDN socket. The S<sub>0</sub> bus starts at the NTBA and can be up to 150 m long. Any ISDN devices can be operated on this bus. However, only two devices can use the S<sub>0</sub> bus at any one time, as only two **B-channels** are available.

**S<sub>0</sub> interface** See **ISDN Basic Rate Interface**

**S<sub>2M</sub> interface** See **ISDN Primary Rate Interface**

**SAD** The Security Association Database contains information about each SA (while an SA is a sort of instance for an SPD entry), such as AH or ESP algorithms and keys, sequence numbers, protocol mode and SA lifetime. For outbound processing, an SPD entry points to an entry in the SAD. That is, the SPD determines which SA is to be used for a given packet. For inbound processing, the SAD is consulted to determine how the packet must be processed.

**SDSL** Symmetric **Digital Subscriber Line**

Symmetric data transmission: **Upstream** and **downstream** data rates range from 128 kBit/s to 2.32.M/Bits/s over ranges up to 3.5 km. Data transfer is performed using a single wire pair.

Since SDSL occupies the baseband, no baseband services like **ISDN** or **POTS** can be offered using the same line.

**Server** A server offers services used by **clients**. Often refers to a certain computer in the LAN, e.g. DHCP server.

In client-server architecture, a server is the software part that executes functions for its clients, e.g. **TFTP server**. In such a case, the server is not necessarily a computer server.

**Setup Tool** Menu-driven tool for the configuration of your router. The Setup Tool can be used as soon as the router has been accessed (serial, >> **ISDN Login**, >> **LAN**).

**SHA1** See >> **HMAC-SHA**.

**SHDSL** Symmetric High Bit Rate >> **Digital Subscriber Line**

SHDSL is a >> **DSL** variant similar to >> **HDSL**. >> **Upstream** and >> **downstream** data rates range from 192 kBit/s to 2.32.M/Bits/s in 2 Wire Mode and from 384 kBit/s to 4.64 MBit/s in 4 Wire Mode. The bintec gateway supports data rates from 192 kBit/s in 4 wire Mode, also. 4 Wire Mode can thus be used to either increase data transfer rates or the supported line length.

Since SHDSL occupies the baseband, no baseband services like >> **ISDN** or >> **POTS** can be offered using the same line. The primary application of SHDSL is high speed data transfer.

**Short hold** Is the defined amount of time, after which a connection is cleared if no more data is transmitted. Short hold can be set to static (fixed amount of time) or dynamic (according to charging unit).

**SNMP** Simple Network Management Protocol

A protocol in the >> **TCP/IP protocol suite** that is used to transport management information about network components. Every SNMP management system contains an >> **MIB**. SNMP can be used to configure, control and administrate various network components from one system. Such an SNMP tool is included in your router, the >> **Configuration Manager**. As SNMP is a standard protocol, you can use any other SNMP managers, e.g. HP OpenView.

**SNMP shell** Input level for SNMP commands.

**SOHO** Small Offices and Home Offices

Small offices and home offices.

**SPD** The Security Policy Database specifies the security services offered to the IP traffic. These security services depend on parameters such as source, destination of the packet, etc.

**Spoofing** Technique for reducing data traffic (and thus saving costs), especially in WANs.



The router answers as proxy for remote PCs to cyclically transmitted data packets with monitoring function (e.g. sign of life messages).

**SSL** Secure Sockets Layer

A technology developed by Netscape, and now standardized, usually used to secure HTTP traffic between a web browser and a web server.

**SSID** The ID of a wireless LAN that is based on IEEE 802.11 is called Service Set Identifier (SSID) or Network Name.

Every wireless LAN has a configurable so-called SSID to clearly identify the specific wireless LAN. It is thus the name of the wireless network.

The SSID can be a string of maximum 32 characters. It is configured at the basic station (access point) of a wireless LAN and at all clients that are to access it. All packets contain this string unencrypted.

In a special case, the SSID ANY can be configured at the client. Thus, in case a client wants to access a wireless LAN, all reachable access points will send an SSID broadcast, so that the desired access can be chosen from a list.

If an access point is to operate as basic station in several wireless LANs, each wireless LAN is assigned an own MSSID (Multi Service Set Identifier).

**STAC** Data compression procedure.

**Subnet** A network scheme that divides individual logical networks into smaller physical units to simplify routing.

**Switch** LAN switches are network components with a similar function to >> **bridges** or even >> **routers**. They switch data packets between the input and output port. In contrast to bridges, switches have several input and output ports. This increases the bandwidth in the network. Switches can also be used for conversion between networks with different speeds (e.g. 100-Mbps and 10-Mbps networks).

**Synchronous** Transmission process in which the transmitter and receiver operate with exactly the same clock signals – in contrast to >> **asynchronous**. Spaces are bridged by a stop code.

**TAPI** Telephony Application Program Interface



Standard Microsoft software interface used by many telephony programs. Telephony programs enable database-supported telephoning on the PC, such as the Windows utility. TAPI services are only supported by routers with an integrated >> **PABX**.

All users of a network can use TAPI services via the bintec Remote TAPI.

**TCP** Transmission Control Protocol

One of the >> **TCP/IP** suite of protocols used for the connection of Wide Area Networks (>> **WANs**).

**TCP/IP** Transmission Control Protocol/Internet Protocol

A protocol suite for the connection of Wide Area Networks (>> **WANs**). The two parts of this protocol suite are >> **IP** (layer 3 of the OSI model) and >> **TCP** (layer 4 of the OSI model).

**T-DSL** Product name used by Deutsche Telekom AG for its >> **DSL** services and products.

**TE** Terminal Equipment

Terminal equipment for subscriber access, e.g. telephone, fax or PC.

**TEI** Terminal Endpoint Identifier

The TEI in >> **ISDN** is an address field in layer 2 that is used for identifying a certain terminal.

**Telematics** Telematics is a combination of telecommunication and computer technology and describes data communication between systems and devices.

**Telnet** Protocol from the >> **TCP/IP protocol suite**. Telnet enables communication with a remote device in the network.

**TFTP** Trivial File Transfer Protocol

Protocol for data transmission.

TFTP server software is a part of >> **DIME Tools**. It is used for the transfer of configuration files and software to and from the router.

**Tiger 192** Tiger 192 is a fairly new and very fast hash algorithm.

**TLS** Transport Layer Security

The TLS protocol provides communications privacy over the internet. The protocol allows client/server applications to communicate in a way that is designed to prevent eavesdropping, tampering, or message forgery. It is based on SSL 3.0 and is intended as successor of that protocol. Refer to <http://www.ietf.org/rfc/rfc2246.txt>.

**Twofish** Twofish was one of the final candidates for AES (Advanced Encryption Standard). It can be considered equally secure as Rijndael (AES), but is slower.

**U-ADSL** Universal >>> **Asymmetric Digital Subscriber Line**

This version of ADSL technology allows the parallel use of various communication techniques, e.g. >>> **ISDN** and >>> **POTS**. It is designed to serve as a worldwide standard in spite of different communication technologies, line qualities and line lengths.

The use of a splitter is not intended. The data rate is up to 512 kbps >>> **upstream** and up to 1.5 Mbps >>> **downstream** over ranges of up to 5.5 km.

**UDP** User Datagram Protocol

A transport protocol similar to >>> **TCP**. UDP offers no control or acknowledgment mechanisms, but is faster than TCP. UDP is connectionless in contrast to TCP.

**Upstream** Data transmission rate from the client to the >>> **ISP**.

**URL** Universal/Uniform Resource Locator

Address of a file on the Internet

**V.11** ITU-T recommendation for balanced dual-current interface lines (up to 10 Mbps).

**V.24** CCITT and ITU-T recommendation that defines the interface between a PC or terminal as Data Terminal Equipment (>>> **DTE**) and a modem as Data Circuit-terminating Equipment (>>> **DCE**).

**V.28** ITU-T recommendation for unbalanced dual-current interface line.

**V.35** ITU-T recommendation for data transmission at 48 kbps in the range from 60 to 108 kHz.



Depending on the quality and length of cable used, the connector type and the min./max. acceptable speed on the DTE side, appreciably higher data transmission rates are possible. Up to 8 Mbps are possible over a short distance of up to 5 m if shielded twisted-pair cables are used.

**V.36** Modem for >> **V.35**.

**V.42bis** Data compression procedure.

**V.90** ITU standard for 56 kbps analog modems. In contrast to older V.34 modems, data is sent in digital form to the client when the V.90 standard is used and does not need to be first converted from digital to analog on one side of the modem (provider), as was the case with V.34 and earlier modems. This makes higher transmission rates possible. A maximum speed of 56 kbps can be achieved only under optimum conditions.

**VDSL** Very high bit rate >> **Digital Subscriber Line** (also called VADSL or BDSL).  
The data rate is 1.5 to 2.3 Mbps >> **upstream** and 13 to 52 Mbps >> **downstream** over ranges of 300 m to 14 km.

The main VDSL applications are: as for >> **ADSL**, but at higher transmission rates and with synchronization over short ranges.

**VJHC** Van Jacobson Header Compression  
>> **data compression** procedure for IP header compression.

**VLAN** Virtual LAN

A logical, not physical, group of devices, defined by software. VLANs allow network administrators to resegment their networks without physically rearranging the devices or network connections.

**VPN** Virtual Private Network

The use of existing structures such as the >> **Internet** structure for connecting private networks (e.g. SOHO exchange). The data can be encrypted between the two endpoints of the VPN to meet increased security requirements.

**VSS** Virtual Service Set

Prefix of a wireless LAN interface

**WAN** Wide Area Network

Wide Area Network connections, e.g. over ISDN, X.25.

**WAN interface** WAN interface

WAN interfaces connect the local network to the (➤➤ **WAN**). This is usually done by means of analog or digital telephone lines (➤➤ **switched** or ➤➤ **leased lines**).

**WAN partner** Remote station that is reached over a ➤➤ **WAN**, e.g. ISDN.

**X.21** The X.21 recommendation defines the physical interface between two network components in packet-switched data networks (e.g. Datex-P).

**X.21bis** The X.21bis recommendation defines the ➤➤ **DTE**/➤➤ **DCE** interface to V-series synchronous modems.

**X.25** An internationally agreed standard protocol that defines the interface between network components and a packet-switched data network.

**X.31** ITU-T Recommendation on the integration of X.25-compatible DTEs in ISDN (D-channel).

**X.500** The set of ITU-T standards covering electronic directory services, compare: ➤➤ **LDAP**. For example, white pages is a directory service for locating individuals by name (by analogy with the telephone directory). The internet supports several databases that contain basic information about users, such as electronic mail addresses, telephone numbers and postal addresses. These databases can be searched to get information about particular individuals.

**X.509** The set of ITU-T standards defining the format of certificates and certificate requests as well as their use.

