

Services

Terms and Definitions

Maintenance-window	Pre-announced, regular time span during which customer access to EUnet services is not guaranteed, in which equipment maintenance and exchange is performed.
TCP/IP	Transmission Control Protocol, Internet Protocol: the main communications protocols used on the Internet, defined in RFC's.
RFC	Request for Comments, documents approved by the IETF and IAB, which, in the case of standard level documents, define technical and operating standards for the TCP/IP protocol suite.
DNS	Domain Name System, distributed name space and directory service used by the TCP/IP protocols.
USENET News	Distributed Bulletin Board System, based on a hierarchy of „Newsgroups“.
Physical layer	As in the ISO reference model and the ARPA equivalent.
Link layer	As in the ISO reference model and the ARPA equivalent.
Transport layer	As in the ISO reference model and the ARPA equivalent.
Name service	As in the ISO reference model and the ARPA equivalent.
Application layer	As in the ISO reference model and the ARPA equivalent.
Prime-time	Normal business hours in the respective country, excluding official national holidays.

UUCP

Unix-to-Unix-Copy.



MIME

Multi-purpose Internet Mail Extension

General Provisions

It is the responsibility of the Affiliate to monitor and measure the performance of local equipment and personnel to determine compliance with the following criteria, and to provide such information to EUnetCS on a timely basis. That responsibility includes development of measurement tools and methods, including the provision of manpower, in conjunction with EUnetCS (see below). EUnetCS will be free to evaluate the Affiliates' performance against the criteria below. Affiliates are required to permit appropriate access to resources, routers, other equipment, and databases so that EUnetCS may readily obtain the required information to evaluate Affiliate performance as far as permitted by local and national law.

It is the responsibility of EUnetCS to provide specialist support for the Affiliates to comply with the requirements. EUnetCS will contribute to Affiliates' as a whole in the development of measurement tools, participation in technical design sessions for tools and evaluation methods, contribution of manpower in the development of tools, support in the analysis of data, and provision of tools as appropriate.

Services and Availability

EUnet technical services (that is transport and value added services) are to be provided in principle by EUnetCS as well as the Affiliates, 24 hours a day, 7 days a week.

It is the responsibility of the Affiliate to provide national infrastructure, equipment, and support for all services as defined in schedule III.

Maintenance windows are to be provided outside of prime-time and should not exceed 2 (two) windows, totalling 1 (one) hour per week. Initially current, and thereafter changes in, business hours, national holidays and maintenance windows are to be reported to customers and EUnet CS by the 1st day of every month.

General Internet Protocol Suite Support

The Affiliates will broadly support the suite of IP protocols, as defined by the Internet Engineering Task Force (IETF) and as published in the RFC series with standard status. Specific requirements for protocol support are listed below. Details of

requirements not included herein, and day-to-day resolution of details and support requirements, are determined by EUnetCS.

Affiliate External Connectivity

Affiliate External connectivity consists of connections from the Affiliate's national network to EUnet CS supplied access to other TCP/IP networks (in layman's terms: the Internet).

Affiliates are responsible for obtaining terrestrial leased line connectivity or equivalent to an EUnet Access Point (for example Amsterdam, Helsinki), or a router managed by another EUnet Affiliate (and from which permission has been obtained). If such connectivity is not available or not economically viable, connectivity may be accomplished via satellite or other means, pending approval by EUnetCS. Such connectivity will be the financial responsibility of the Affiliate.

Affiliates that do not yet have leased line or equivalent approved connectivity, have 6 (six) months to obtain such connectivity, if not possible, an explanation and alternative must be provided for review by EUnetCS.

The Affiliates External links must be maintained and upgraded in accordance with the load caused by regular, customer-initiated production traffic. Current performance criteria are:

Maximum prime-time packet loss	1%
Maximum non prime-time packet loss	2%
Maximum prime-time latency	100ms
Maximum non prime-time latency	200ms

These values are 5 minute averages, sampled every 5 minutes. The criteria are considered not achieved if these values are exceeded more than twice per day outside of maintenance windows.

As part of network monitoring and control, the Affiliate is required to filter damaging traffic and/or prioritise important traffic in case of traffic storms, so as to maintain an acceptable quality of service. The Affiliate is further required to liaise with customers and resolve problems caused by misconfigured or misbehaving software.

The External approved connectivity must be available at least 99.9% (excluding carrier induced problems) per month. Results will be published and evaluated on a monthly basis by EUnet CS. EUnetCS and the Affiliate shall take steps to rectify any problems, delays etc., caused by non-performance of carriers.

In addition to supporting the TCP/IP suite of protocols, all routing and other equipment used for External connectivity will fully support all connectivity, performance, and protocol processing requirements of the routing equipment in use by EUnetCS (eg. the benchmark for which is presently the behaviour of cisco routers).

Physical Layer Redundancy

Each Affiliate is required to obtain either a second (hence singly redundant) link to a EUnetCS Access Point or to obtain an automatic fall-over connectivity via dial-up, ISDN, leased-line, or other service. The capacity of that backup must be at least two-thirds that of the link(s) which it backs up. The combined availability of base and redundant connectivity will average at least 99.95% excluding switching and rerouting time on a monthly basis.

EUnetCS will provide support for redundant connections and automatic cut-over.

Affiliate Internal Connectivity

Each Affiliate will provide local access points (POPs) connected by a national network, for each individual POP, the above performance criteria for External connectivity will apply to the connectivity to centrally supplied services by the Affiliate and to the External connectivity.

Targets for coverage of the Affiliates national population in local calling zones are set on a country by country base every year, with the general goal of covering 100% of the population at as low as possible access costs.

Customer Access Connectivity Types

Where available from local telecoms providers, customer connectivity must be provided via at least:

- Modem dial-up over the PTSN (public telephone network)

- ISDN (Integrated Services Digital Network)
- Leased-line
- Public packet-switched networks

The Affiliate is required to support new customer connection technologies as they become available and viable.

Where any of the above media are not available, the Affiliate is encouraged to work with local telecoms providers (eg. by indicating demand) in order to effect early and competitive implementation of services over those media.

Modem Availability

The Affiliate will maintain sufficient numbers of modems so that on a daily average there will be at least one modem available 99% of the time per modem bank or rotary per day. Modem availability should be measured, among other techniques, by making random calls to modem numbers, with special attention paid to periods of heavy use.

It is mandatory to support the fastest modems commonly available on the market.

Link Layer

The Affiliate is required to support Customer connectivity using at least:

- Point-to-Point-Protocol (PPP) [RFC 1661 and earlier]
- Serial Line Internet Protocol (SLIP) [RFC1055]
- Appropriate encapsulations (eg. Frame Relay, X.25) for the connection to public packet-switched networks.

Network Layer

The Affiliate is required to support for Internal and External connectivity:

- Internet Protocol (IP) [RFC 791 and later]

- Border Gateway Protocol - 4 (BGP4) [RFC 1771 and later]
- Classless Routing

Transport Layer

The Affiliate is required to support:

- Transmission Control Protocol (TCP) [RFC 793 and later]
- User Datagram Protocol (UDP) [RFC 768]

DNS Service

Each Affiliate will provide local DNS services for their customers.

EUnetCS will operate secondary name servers for selected customers; EUnetCS will not interact directly with customers of the Affiliate, all interaction will be via the Affiliate.

Application Layer

USENET News

Each Affiliate will support USENET News services per the following criteria:

- Sufficient computing resources (bandwidth, server computational power, and disk storage) to maintain common news hierarchies as requested by customers, current on at least a daily basis in the case of a 64 k or lower speed connection. In the case of a 128 k or higher speed connection, the Affiliates news feed will be regularly at most half a day out of date. Newsgroups with mainly non-discussion content may be exempt from this requirement but the Affiliate is strongly encouraged to carry a wide range of Network News except where prevented by national and local law. The Affiliate is in any case required to discuss exclusion of parts of Network News with EUnetCS.

- Affiliates should have sufficient resources to maintain a full news feed to all full-feed subscribers such that subscribers should be capable of receiving their Network News feed articles within 1 hour of it being received by the Affiliate, save for customer resource-induced (eg. bandwidth) delays.
- The Affiliate will maintain a minimum of 5 days of news on-line for access by subscribers.
- Interactive Affiliate News Service availability will not be less than 99% per month outside of maintenance windows.

Electronic Mail and Messaging Service

Affiliates will support the full capabilities of Internet E-Mail as specified by RFC-822 as well as MIME extensions where relevant.

UUCP addressing is depreciated.

99% of messages received by central facilities of the Affiliate will be delivered within 15 minutes unless the Affiliate is constrained by the performance of customers (e.g. dial-up schedules) or other parties (e.g. a third network is not in operation). Messages will be retained for four days before being returned as undeliverable, a notification message will be sent to the Originator of the message after 4 hours delay.

World Wide Web and Related Services

Affiliates will offer local hosting of WWW services, including both rack space for (suitable) customer equipment and WWW space on the Affiliate's server.

Performance of the Affiliate's server(s) will not be significantly server-resource-bound (measurement criteria to be developed).

Pan-European Service Support

For pan-European services the Affiliate will provide the necessary infrastructure as specified by EUnetCS.

Commercial Methods

The Affiliate will maintain professional functions in:

General Management
Finance and Administration
Marketing and Sales
Customer Support
Technical Operations

The responsibilities of General Management, Finance and Administration, Marketing and Market Communications, and Sales are described below.

General Management

General management is charged with overall leadership of the Affiliate's enterprise, and oversight of, and co-ordination between the functions noted below. General management shall maintain and develop quality and endeavour to develop customer trust by providing support in problematic areas and support in finding solutions. General management is hence responsible for ensuring that the Affiliate's organisation complies with the content of these schedules and is responsible for the co-ordination of the daily running of the business (especially with respect to co-ordinating tasking and priorities) with EUnetCS and with the other Affiliates and associated organisations.

Finance and Administration

Finance and administration will annually develop a budget, subdivided into distinct line items, to include on a monthly base:

- Revenue per service offering
- Pass-thru costs
- Infrastructure costs
- Personnel costs

Reports on actuals for each of these items will be produced on a quarterly basis. Projections will be updated on a quarterly basis.

The Affiliate will also maintain a less detailed 3 year long term plan modelled on the above, to be updated annually.

Marketing and Sales

An annual marketing, market communications, and sales plan will be produced, to include:

- market strategy
- general MarComs plan
- new service introduction plans
- monthly sales projections per service
- channel development plans

Internal reports on progress for each of these items will be produced on a quarterly basis. Projections and actuals will be updated on a quarterly basis.

Pan-European co-operation

Each Affiliate will be required to enter into and support pan-European promotion activities and global service offerings, from time to time, as determined and co-ordinated by EUnetCS.

Style Manual

EUnetCS will develop a Style Manual for use by all EUnet Affiliates, whose output will be required to be consistent with its specifications within 6 months after publication.

Supporting collateral will be developed and distributed by EUnetCS. The Affiliate, at its discretion, will adapt the collateral to local context.

Terms and Conditions

All customers will have subscriptions or contracts under general and specific terms and conditions which have been legally reviewed.

Product Releases

The Affiliate is required to comply in a timely fashion with the release and upgrade schedules of all European-level products.

Response to Customer Inquiries

The Affiliate will maintain electronic sources of pre-sales information via E-mail and WWW. Those sources will include the services listed below.

The Affiliate will maintain a sales desk manned during at least prime-time. During prime-time, customers will be able to establish contact with the sales desk within 2 minutes of calling (i.e. the maximum busy signal or unanswered ring will be 2 minutes), and will establish contact with a staff member 95% of the time during prime-time. During the remaining 5% of prime-time, the response may be made by an automatic operator which must be capable of receiving messages, including contact information (e.g. a telephone number) for the caller. Outside of prime-time there must be an automatic operator available if no personnel are available.

Qualification of all inquiries (telephone, FAX and E-mail) and responses will be made within 1 working day.

Requests for information will result in collateral being mailed out within 1 (one) working day.

A database of inquiries will be maintained.

The Affiliate, recognising that customer sales inquiries are a rich source of sales, market intelligence and new opportunities, will aggressively pursue and support customer inquiries (commonly known as "don't say no, do say how much it costs").

Service Offerings

The Affiliate will provide at least the following services, under the names indicated below:

InterEUnet

InterEUnet is a multi-user IP connectivity service provided over leased lines or similar facilities.

DialEUnet

DialEUnet is a multi-user IP connectivity service provided over dial-up, modem and ISDN connections.

PersonaleUnet

PersonaleUnet is a single-user IP connectivity service provided over dial-up modem or ISDN connections.

EUnetNews

EUnetNews is EUnet's Internet USENET News Service.

EUnetMail

EUnetMail is EUnet's Internet mail service (RFC-822) which is available over the connectivity services list above and other store and forward protocols (eg. UUCP, X.400).

EUnetWeb

EUnetWeb is EUnet's WWW service in a lightweight version (the customer rents resources on an EUnet Web server) and a heavyweight version (the customer provides his own server for homing at an EUnet POP, or the customer leases an entire EUnet Web server).

EUnetTraveller

EUnetTraveller is a service providing access via dial-up modem connectivity from anywhere in Europe to the most cost effective EUnet Point of Presence.

Customer Support and Other Services

Customer Support

The Affiliate is to provide a range of customer support offerings, ranging from a limited support for a "lightweight" entry-level service to a 24 hour x 7 days per week fully manned support service. However, the Affiliate must provide in its product portfolio at least one significant customer support service offering that is consistent with the following. Whatever level of support is offered, the Affiliate must consistently provide service equal to or better than that represented in the support description.

Help Desk Services (Technical Support, Post-Sales)

The Affiliate will maintain a help desk manned during at least prime-time. During prime time, customers will be able to establish contact with the help desk within 2 minutes of calling (that is, the maximum busy signal or unanswered ring will be 2 minutes), and will establish contact with a staff member 95% of the time during prime-time. During the remaining 5% of prime-time, the response may be made by an automatic operator which must be capable of receiving messages, including contact information (eg. a telephone number) for the caller. Outside of prime-time there must be an automatic operator available if no personnel are available.

Qualification of all inquiries (telephone, FAX and e-mail) and responses will be made to the customer within 1 working day. Qualification includes determining a quick fix if one is available; if not, a customer inquiry record will be issued and an appropriate staff member will be assigned the action.

Emergency customer support will be available outside of prime-time 7 days a week. Emergency support may be limited to immediate problems in service or connectivity and hence be outside of casual questions and may be provided by EUnetCS.

The Affiliate will maintain a list of on-call operations staff accessible by EUnetCS. Affiliate operators will respond to such inquiries within 120 minutes of the call, 24 hours a day, 365 days per year, and will be on-line at a suitable operators station within 240 minutes of receiving the call if necessary.

Maintenance of Current Trouble Ticket Database

The Affiliate will maintain a database of current and past trouble tickets. The segment of this which is useful to customers will be maintained on a local or EUnetCS server (which may be accessible by various mechanisms, including FTP (standard and via E-mail), or WWW), access to the data will be provided at various levels (for example EUnet Affiliate, EUnet Customer, Public). These performance and technical postings will include original problems, fixes, and overall performance statistics (including but not limited to mean time to respond to customer problems and mean time to repair problems). Postings will not be limited to "good news" nor to resolved issues; all user significant technical considerations will be made available. General performance measures such as line loading and up-time will be included.

Maintenance of Customer Database

The Affiliate will maintain a database of all customers and their status including outstanding support actions.

Schedule VII to the Affiliation Agreement



Pricing Policy

EUnet Pricing Scheme for 1996

All prices shown below are in ECU. Invoices shall be billed on a monthly basis.

Management Fees

64K - 440 c/m²
128K - 800 c/m²
192K - 1160 c/m²

Bandwidth (Kb)	Fee per year	Fee per month
less than 64	2,500	208
64	7,500	625
128	12,000	1000
128-512	18,000	1500
512 or greater	24,000	2000

Network Charges

Bandwidth (Kb)	Fee per Kb
9.6	20
19.2	20
32	19
64	18
128	18
192	17
256	17
384	16
512	15
768	14
1024	14
1536	13
1920	12

Service charges

Bandwidth (Kb)	Fee per Kb
9.6	9
19.2	9
32	9
64	8
128	7
192	6
256	6
384	5
512	5
768	5
1024	4
1536	4
1920	4