PRESS RELEASE

European Commission showcases
deployment of IPv6, the new Internet protocol

Brussels, December 22, 2003 – IPv6, the new version of the Internet Protocol, is ready for deployment. The current version of the Internet Protocol (IPv4) has been in service for over 20 years. However, IPv4 cannot scale to deliver the future promises of our 'digital century' where many billions of devices will be online and addressable on the Internet. The new Internet Protocol version 6 (IPv6) is being gradually introduced to move towards a New Generation of the Internet and the European Commission, through its IST research projects, is a major supporter of this latest networking technology.

To underline this fact, the Information Society Directorate-General of the European Commission is organising the 'Global IPv6 Service Launch Event' on January 15–16, 2004 in Brussels. The event is co-sponsored by two of the largest IPv6-related R&D projects funded by the European Commission: 6NET and Euro6IX.

The service launch will showcase the new protocol and stress its importance and impact in order to spur the deployment of IPv6 in all sectors and help trigger and inspire the European industry at large to understand the urgency of deployment of IPv6. Research results from a number of projects will be demonstrated, validating the actual and successful deployment of IPv6 along with a number of innovative applications.

The highlight of the event will be the formal inauguration of a global operational IPv6 connectivity service for the research community, which has involved the collaboration of the pan-European Research Network – GÉANT – with other research networks world-wide..

One of the main limitations of IPv6's predecessor – IPv4 – resides in the scarcity of the address space. As a result, the world is running out of this fundamental resource needed by every computer or device to access the global network. IPv6 resolves this issue by providing virtually unlimited addressing space. IPv6 also provides a number of new considerable benefits including provision for ease of use ("plug n' play") through automatic configuration, enhanced security, enhanced mobility, and end-to-end network connectivity between any device where appropriate.

 'IPv6 is a critical technology enabling integration of the Internet with mobile communications, an area where Europe leads the world,' said Erkki Liikanen, European Commissioner for Enterprise and the Information Society. 'The importance of IPv6 to European competitiveness in general cannot be overestimated. Europe needs to match its world class research with political commitment to make IPv6 happen.'[1]

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[1] Commission takes step Towards the Next generation Internet
(http://europa.eu.int/rapid/start/cgi/guesten.ksh?p_action.gettxt=gt&doc=IP/02/284|0|AGED&lg=EN&display=)

BACKGROUND

In February 2002, the European Commission adopted the Communication entitled 'IPv6: Priorities for Action'[2]. The Communication calls for a European action plan to accelerate the rollout of Internet Protocol version 6 (IPv6) – a key technology for the New Generation of the Internet. The Internet as it exists now does not have sufficient Internet addresses for the long-term future of the global Information Society. IPv6 more than solves this problem.

6NET

The 6NET network is a wide European backbone, with collaborative-based management, at different layers. It provides disruptive research networking connectivity, for example, for designing and implementing new IETF protocols. Some applications are also being developed, including GRID components, and there is a special focus on transition strategies. For further information, see http://www.6net.org.

EURO6IX

Euro6IX network interconnects several Telecommunication Operators' networks (Telcos), with independent network management (commercially oriented, with Service Level Agreements). It is oriented towards end users, with peering, transit and Internet Exchange (IX) arrangements for local traffic exchange, and handling Telco customer cases such as ISPs (Internet Service Providers), Campus and enterprise networks. For further information, see http://www.euro6ix.org.

ABOUT IPv6

IPv6 is an upgrade to the networking protocol, which is central to the working of the Internet. The Internet Engineering Task Force (IETF) developed the basic specifications during the 1990s after a competitive design phase used to select the best overall solution. The primary motivation for the design and deployment of IPv6 is to expand the available address space of the Internet, thereby enabling internetworking of billions of new devices (PDAs, cellular phones, appliances, etc.) and new users. IPv6 is particularly relevant for countries, such as China and India, with a rapidly increasing Internet user community. Another key driver for the demand of IPv6 are the new, 'always-on' technologies (xDSL, cable, Ethernet-to-the-home, fibre-to-the-home, PLC, etc.).

While the existing protocol, IPv4, has a 32-bit address space that provides for a theoretical 2^{32} (approximately 4 billion) unique globally addressable hosts, in practice, the number of global IPv4 addresses that can be used is far less, due to inefficiencies in address allocation and use. IPv4 simply cannot support an Internet scaling to many billions of globally connected hosts. Network Address Translation (NAT) has extended IPv4's life in conjunction with private IPv4 addresses. However, NAT complicates application deployment and, more importantly, cannot support new Internet growth areas including those 'always-on' and 'peer-to-peer' services that require connections be established to devices in home networks. IPv6 solves both problems straightforwardly by providing a 128-bit address space that can uniquely address 2^{128} (about 340 undecillion[3]) hosts.

Further information is available on the website http://www.global-ipv6.net, and via the contacts:

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[2] http://europa.eu.int/eur-lex/en/com/cnc/2002/com2002_0096en01.pdf
[3] Actually 340,282,366,920,938,463,463,374,607,431,768,211,456 addresses.