

Brussels, 14<sup>th</sup> January 2004

## **European Commission hosts inaugural event to celebrate the launch of the world's first all IPv6 research network**

*The European Union has been instrumental in giving political and financial support to the rapid take up of the new Internet Protocol – IPv6. This next generation of Internet technology will support the better integration of new Internet services into homes, businesses and even vehicles. The European Commission has fostered co-operation between the Research and Education Networks around the world to establish the world's first all IPv6 research network. The global IPv6 service for the research community will be launched at the inaugural "Global IPv6 Service Launch" event, hosted by the European Commission, on January 15-16, 2004 in Brussels in celebration of this achievement.*

The Global IPv6 Service Launch will attract top-ranking officials from industry and government ministries from all over the world.

Erkki Liikanen, European Commissioner for Enterprise and the Information Society, who will actively participate in the event, said: "This next generation of Internet technology provides a platform to bring new and exciting services to business and citizens across the European Union. IPv6 is a major step forward in Internet capabilities. It is a crucial component of our goals for eEurope and the faster roll out of broadband networks. With IPv6 we can continue to build on Europe's competitive strengths and explore the better integration of the Internet into a host of new devices and services including 3<sup>rd</sup> generation mobile services. From the start, the European Union has been a key player providing both political and financial support to IPv6. Today's inaugural event restates our commitment to achieving a fast roll-out of the new Internet Protocol – IPv6".

### **The IPv6 Service Launch Event**

The IPv6 Service Launch Event will celebrate the establishment of a global networking infrastructure providing IPv6 services for research communities around the world. The event will showcase the new version of the Internet Protocol and highlight its importance, including how it can be used with innovative applications. This should build awareness of the urgent need to move ahead with deploying IPv6 in all sectors of the economy.

The two-day event is co-organised by the European Commission's Information Society Directorate General and two major EC-funded IPv6 test-bed projects (Euro6IX and 6NET). Commissioner Liikanen will give a Press Conference on the inauguration of IPv6 at the event itself at 12.30 on Friday 16 January at the Résidence Palace, Rue de la Loi 155, in Brussels.

At the event, there will be practical demonstrations of IPv6's potential: IPv6 enabled vehicles, including a "satellite car" which can be connected via satellite to IPv6 anywhere in the world, a digital house with lights, blinds, alarms and other systems connected via IPv6 and which can be controlled remotely, and high definition television making use of IPv6 advanced multicasting capacity.

### **An address for every grain of sand**

One of the major advantages of the new Internet protocol is that it overcomes the growth problems of the Internet caused by the current limitations in the number of IP-addresses needed for every computer or other device in order to access the Internet. The new protocol allows for a virtually unlimited number of ( $2^{128}$ ) addresses – enough to assign an address to every grain of sand on all the world's beaches. The increase in the number of addresses is a crucial precondition for future developments of the Internet, including the proliferation of always-on connections and internet-capable devices such as mobile phones, car navigation systems and home appliances. The new protocol also includes a number of other improvements to the previous protocol that will make the Internet faster, more flexible and secure as well as facilitate the implementation of new services.

### **IPv6 deployed in European Research Networks**

The European Union in particular sees the introduction of IPv6, alongside unrestricted access to broadband, as critical for both the achievement of an information society and for boosting growth, competitiveness and productivity through the provision of this new generation of services and applications. The importance of IPv6 was highlighted by European Heads of State and Government at the Spring European Council in Barcelona in March 2002.

The European Commission has actively supported this vision through its programme of scientific and technological research. The Commission has co-funded a number of projects concerned with validating the large scale deployment of IPv6 to the tune of 85 M€ EU contribution between 1999-2003. The results of these projects demonstrate that IPv6 is stable, reliable and ready to be deployed wholesale.

By introducing IPv6 into research networks, researchers living and working in different countries have access to state-of-the-art networking services in order to pursue their research. GÉANT, the European Union's flagship research network – which is also the world's largest – has deployed IPv6 in stages between April and October last year to Europe's research and education community.

Due to the sheer number of devices connected to the Internet, the changeover from the current version of the Internet Protocol, IPv4, to IPv6 will not happen overnight. Nor indeed must it do so, since an IPv6-enabled device or router can readily function in an otherwise predominantly IPv4 network. Those devices that do migrate to IPv6 will, however, be the first to benefit from the protocol's improved functionality and be early winners in the new generation of services.

## **Background information**

### **Euro6IX**

Euro6IX is a co-ordinated initiative of major European Telecom companies, equipment manufacturers, solutions/software providers, research laboratories, Universities and end-users. The prime objective of the Euro6IX project is to design, develop, and deploy an appropriate architecture in order to validate a pan-European pre-commercial IPv6 Internet Exchange Network, connecting several regional and strategic neutral IPv6 Internet Exchange points across Europe. Euro6IX aims to achieve higher levels of robustness and service quality than currently offered by IPv4 Internet Exchange Networks. The 15 M€ Euro6IX project includes additional sponsorships from North America and the Pacific Rim. Total EU funding of 7 M€ is provided over the full three years of the Euro6IX project.

### **6NET**

6NET aims to encourage the adoption of IPv6 by resolving two major hurdles considered to be hindering its widespread acceptance which concern apprehension in some quarters of the maturity of the new technology and a questioning of the actual added benefits. The project will achieve this by demonstrating that IPv6 is indeed not only fully functional and stable, but that it offers distinct advantages over IPv4. 6NET aims to help European research (through close collaboration with the National Research and Education Networks) and industry play a leading role in defining and developing the next generation of networking technologies. The 19 M€ 6NET project is co-funded by the European Commission under the Information Society Technologies (IST) Programme within the EU's 5<sup>th</sup> R&D Framework Programme. Total EU funding of 10 M€ is provided over the full three years of the 6NET project.

### **GÉANT**

Reaching over 3,500 research and education institutions in Europe (40 countries, ranging from Iceland to the Caucasus) through its connections to National and Regional Research and Education Networks, GÉANT provides the highest capacity and offers the greatest geographic coverage of any network of its kind in the world. GÉANT enables scientists to collaborate on an international stage by providing them with a world-class backbone that offers the bandwidth and the Quality of Service required for their research and development activities. GÉANT has a dual role of providing an infrastructure to support the advanced communication needs of the scientific community, as well as providing an infrastructure for research on state-of-the-art communication technologies itself. GÉANT is delivered by DANTE for Europe's research and education networks.

GÉANT is co-funded by the European Union within the 5<sup>th</sup> R&D Framework Programme. Total EU funding of 80 M€ is provided over the four years of the GN1 (GÉANT) project.

The GÉANT network, which undergoes continuous upgrading, currently has a total trunk capacity of 185 Gbit/s. In addition, the network provides 14.5 Gbit/s of international connectivity to North America and Japan. Further links, to the Latin American and Mediterranean regions, are in process of being implemented within the ALICE and EUMEDCONNECT projects respectively and will become operational within the next few months.

## **The Internet Protocol**

The Internet Protocol (IP) is central to the internal working of the Internet and provides the means by which computers or devices connected to the Internet communicate. The current version of the Internet Protocol - IP version 4, or IPv4 - was designed at a time long before the emergence of the World-Wide Web and mobile data communications and the demands of both these technologies have manifested some of the more serious limitations of IPv4.

Every device wishing to establish a connection to the Internet requires an IP address, and one of the most fundamental problems of IPv4 is that it does not provide a sufficient number of addresses for current and future user demand. The problem is further compounded in a number of world regions which, due to a prior uneven allocation of addresses around the world, are finding themselves rapidly running out of available addresses. A number of work-around solutions have been put in place which have successfully slowed the exhaustion of IP addresses, but aside from being costly and complex to implement, they essentially hamstring many potential innovative end-user applications and services.

Although the "new" Internet Protocol, IPv6, was primarily designed to overcome the problems inherent in IPv4, other features were added in order to make the new protocol significantly more flexible and much more suited to the needs of today's Internet. The result is a protocol, every way as resilient and robust as its predecessor but with improved and added capabilities, which is set to revolutionise the way the Internet will be used in the future.

## **Further information**

For more information on the event please see:

<http://www.global-ipv6.net>