Press release

PRESS RELEASE

FOR IMMEDIATE RELEASE

Madrid, 31 October 2011

European Project TRILOGY redesigns the world's Future Internet Infrastructure

With YouTube reaching 3 billion views per day and 2 days' worth of uploaded videos every minute in 2011, Internet traffic has reached unprecedented figures. Demand, coupled with increasing security threats, has led to a decrease in bandwidth availability and has, at times, cast doubt over the strength of Internet design altogether.

The European project TRILOGY, with Madrid-based participating entities, has resulted in more resilient, more flexible and more cost effective connections for Internet users, maintaining quality of service intact in spite of the ever-increasing challenges to Internet capacity.

This EU funded project, which has developed a long-term solution to Internet traffic congestion, has just received a prize at Future Internet Week in Poznan, Poland. The TRILOGY* project received the Future Internet Award for its outstanding contribution to Internet architecture and protocols, which will help provide users with faster, more reliable Internet connections. The project brought together Madrid-based University Carlos III and Institute IMDEA Networks researchers, in partnership with other organizations and companies from Europe and the USA, with the bold objective to redesign the world's Future Internet Infrastructure, in particular developing two of the key control functions of Internet -Reachability and Resource Control. At the

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heart of the project lie economic efficiency, potential usability and the production of public, deployable deliverables. TRILOGY has developed methods of managing data traffic and optimizing bandwidth availability so that congestion at choke points of the network is minimized, thus resulting in more resilient, more flexible and more cost effective connections for Internet users.

The results and standardization efforts of the TRILOGY project are already being acknowledged by the ICT industry, integrating this into both open source and commercially available operating systems. This process of knowledge and technology transfer ensures that Internet services and applications mushrooming on the net over recent years become available to users through sufficiently resilient and flexible connections. With YouTube reaching 3 billion views per day and 2 days' worth of uploaded videos every minute in 2011, Internet traffic has reached unprecedented figures. Demand, coupled with increasing security threats, has led to a decrease in bandwidth availability and has, at times, cast doubt over the strength of Internet design altogether. TRILOGY has aimed to maintain quality of service intact in spite of the ever-increasing challenges to Internet capacity.

Completed in March 2011, the three-year TRILOGY project has developed mechanisms that automatically and transparently shift data traffic from congested (i.e overloaded with data) network paths to other, less loaded, parts of the network. Specifically, TRILOGY has developed the Multi-Path Transmission Control Protocol (MPTCP) - an extension to standard Internet TCP that enables data to be transmitted from one network node to another via multiple network paths at the same time, an algorithm for multipath routing to take advantage of multi-homing at endpoints and “congestion exposure” extensions to the Internet Protocol (IP) to monitor Internet congestion. MPTCP has already been ported to Android and is in the process of implementation in Solaris (by Oracle). All in all, Trilogy-developed technology will enable a better quality Internet for all.

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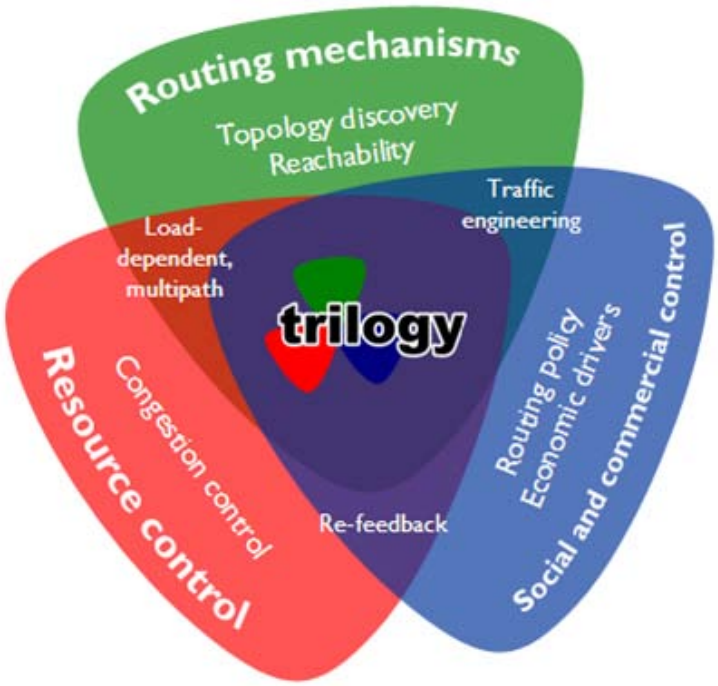

The EU has contributed €5.9m in ICT research funding to this €9.2m project. The award acknowledges the project as one with the greatest potential to advance the Future Internet and whose results provide the best example of innovative products and services in the area. The Spanish side of the project was led by Dr. Marcelo Bagnulo Braun, Associate Professor of the Telematics Department at the Carlos III University in Madrid (UC3M), a member of NETCOM Research Group and an ongoing collaborator with Institute IMDEA Networks. Two of the Institute's researchers actively collaborated on the project.

The partners participating in the project were British Telecommunications PLC (Coordinator), Deutsche Telekom AG, NEC Europe Ltd., Nokia Oyj, Roke Manor Research Ltd., Athens University of Economics and Business – Research Center, Universidad Carlos III de Madrid, University College London, Université Catholique de Louvain, Eurescom - European Institute for Research and Strategic Studies in Telecommunications, GmbH and Stanford University.

** TRILOGY: Re-architecting the Internet - An Hourglass Control Architecture for the Internet, Supporting Extremes of Commercial, Social and Technical Control was a collaborative research project within the ICT theme of the 7th Framework Programme of the European Commission which contributes to the objective "Network of the Future" of the Work Programme.*

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ABOUT INSTITUTE IMDEA NETWORKS

Institute IMDEA Networks is an international research institute supported by the Regional Government of Madrid and the European Union. The Institute brings together distinguished and young scientific researchers from all over the world to develop cutting-edge science and technology in the field of networking. In order to ensure a truly international perspective, the Institute's working language is English. Promoting interdisciplinary collaboration, the Madrid-based Institute works in partnership with leading businesses and scientists from around the globe. By generating new knowledge and understanding through its activities, the Institute supports the continued development of Madrid and Spain as a centre for international scientific and technological research.

www.networks.imdea.org

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