Real-Time Internet Platform Architectures

Networks for speech, video, and data are increasingly being connected and streaming media is growing faster than the Internet itself. Providers and their clients rely equally on a high quality of service for these new applications, but this cannot be achieved within the existing Internet architecture.

A new architecture for multimedia data streaming
Although the foundations for speeding up the development of the Internet originated in Europe, the main suppliers of Internet infrastructure equipment are in the USA. US-based companies also have a very important vote in standardisation bodies. However, mobile applications are growing faster in Europe than in the USA and European industry is strong in mobile services. Also, Internet address space is unevenly distributed around the world, so the growing number of mobile Internet-connected devices is rapidly depleting the available space. This presents European companies with an opportunity to develop network infrastructure equipment for a more modern version of the Internet.

RTIPA has contributed to building a leadership role for European industry in providing solutions for the market in networked distribution of speech, video, and data, and to paving the way for the enhancement of Europe’s communication infrastructure e.g. in implementing the next-generation Internet Protocol (including IPv6, security, QoS, multi-cast, mobility and policy management).

RTIPA has developed a novel Internet protocol network architecture to cope with the requirements of real-time streaming of multimedia data that includes existing products and standards. RTIPA results make it possible to build Internet-related applications with high Quality of Service (QoS) and to promote interest in QoS-related Internet services and applications.

A comprehensive platform for real-time Internet
RTIPA has shown that reducing fragmentation in the market for Internet-based multimedia goods and services will significantly benefit the European economy, as the standardised infrastructure will enable new market opportunities for new content and service providers. Improved multimedia communication will speed up the development of many industries and facilitate greater cooperation.

As the market becomes more homogenous, suppliers with compliant products will be able to supply equipment such as servers, terminals, routers, and switches to create interactive multimedia services. These products, which themselves contain a lot of software, will require compatible software on computers, phones and Personal Digital Assistants (PDAs).

Internet is becoming a medium for distributed interactive audio and video, offering huge possibilities for new services as well as enhancing existing services. As these become more standards-compliant, there will be a growing demand for service providers’ expertise. Also, the pervasive use of home shopping, home banking and home study via the Internet will help stimulate economic activity.

RTIPA – a comprehensive platform for real-time Internet – is part of the drive to make Internet
PROJECT RESULTS

multimedia communications
more homogeneous and efficient.
Increased demand for real-time
services will boost European job
and wealth creation.

QoS-related Internet applications
and services
Thanks to RTIPA, European
companies can prepare future
QoS-related applications such as
Internet video broadcasting and
telephony, improved multimedia
support, mobile Internet, routing
and infrastructure services.

Some of the many opportunities the
project partners are pursuing:
• A spin-off company sponsored by
  Thales has developed an edge
device product that is located
at the border of the network,
offering the network services
studied during the RTIPA project.

• Philips intends to integrate RTIPA
  work on data networking for
telephony, surveillance and video
  reception in its products.

• RTIPA results are allowing France
  Telecom to further develop its
market for data networking.

• The RTIPA work done in the
  mobile Internet area is speeding
up the availability of Siemens’
mobile Internet services and
mobile equipment as well as
infrastructure supporting their
mobile equipment.

• EolRing’s future network products
  will include features that result
from the QoS work done in RTIPA.

RTIPA has also made major
contributions to the standardisation
of QoS and other Internet services
for real-time streaming applications
(at the Internet Engineering Task
Force - IETF).

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ITEA - Information Technology
for European Advancement -
is an eight-year strategic
pan-European programme for
pre-competitive research and
development in embedded and
distributed software. Our work
has major impact on government,
academia and business.

ITEA was established in 1999
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programme. We support coordi-
nated national funding submissi-
ons, providing the link between
those who provide finance,
technology and software engi-
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for Projects, evaluate projects,
and help bring research partners
together. We are a prominent
player in European software
development with more than
5,000 person-years of R&D
invested in the programme so far,
and another 10,000 anticipated
over the next five years.

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products, systems, appliances
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two countries. Our programme
is open to partners from large
industrial companies, small and
medium-sized enterprises (SMEs)
as well as public research
institutes and universities.

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