

Cultural collaboration: Dancing around the World

TEIN network has developed a dramatic way of showing just how effective and powerful its network capability is.

Guests at a meeting of Asia Pacific Advanced Networks (APAN) were treated to a performance with a difference. Sitting in a conference centre in Korea in front of a giant screen, they watched a live dance performance. But the dancers and musicians were not physically in Korea, or even together in one place. They were in three separate locations across the globe – in Brazil, Czech Republic and Spain. The three live performances were being streamed in real time to Korea, where they were brought together and synchronised to give one seamless show.

Using the power of IP networks to bring cultures closer together

The cyber-performance became a reality, thanks to some clever software, systematic co-ordination, and a series of linked high capacity information network. Among them is the Trans-Eurasia Information Network (TEIN) that connects scientists, researchers and academics across the Asia-Pacific region. The speed and reliability of TEIN and the other networks involved in the event allowed the highly precise synchronisation of the three completely separate data streams that made the performance together.

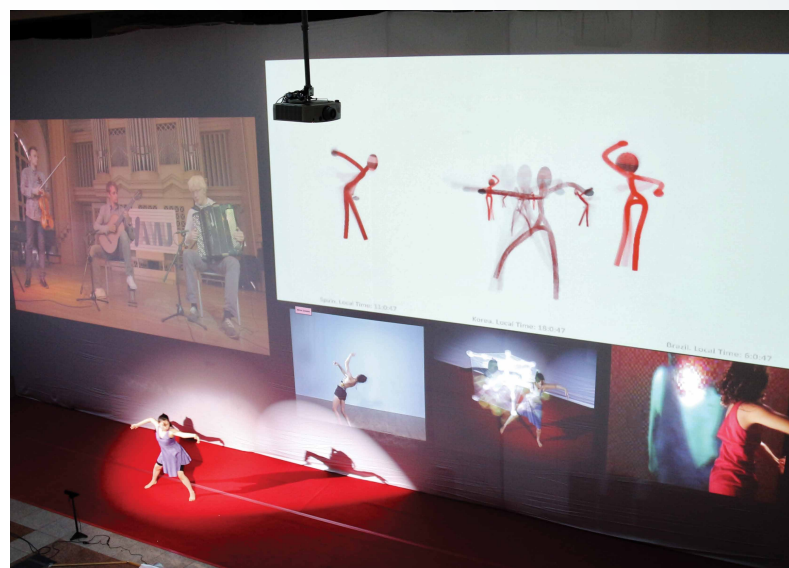
High-speed research and education networks, such as TEIN, were originally developed as tools for scientists and academic institutions – to enable them to share data and co-operate in real time. However, the power of these networks lies also in enabling an entirely new way of collaborating on a wide variety of cultural projects – building bridges between different cultures.

e-Culture – building bridges between different communities

Innovative digital technology is radically changing communication between Asia-Pacific and the rest of the world. It provides a whole new way of developing and exchanging content – and with it – to generate better understanding between communities.

e-Culture is already being used in a wide variety of cultural applications:

- saving fragile cultural artefacts, by digitising and archiving them for future retrieval
- securing heritage with digital archives and repositories
- providing accessible online resources – e-libraries and e-museums
- creating entirely new forms of media
- disseminating best-practice digitisation strategies



The Challenge :

To build better understanding between communities across the globe. This endeavour is a major TEIN goal: 'Enable and promote collaboration on applications of broad societal benefit'.

The Solution :

Utilising the power and reliability of high-speed data networks offers the opportunity for a whole range of real-time collaboration that support TEIN's central objective. The cyber-performance (CP) in Korea is an example, of what is easily accessible and fully available to any group with good connections to one of the many worldwide networks of this kind.

Key Benefits :

e-Culture is by nature multi-disciplinary. As such it is not limited to those working in the cultural sector. Everyone with an interest in their own society can contribute to and gain enrichment from e-Culture activities. The ability to easily share content in this way is an entirely new phase of cultural collaboration.

How it works

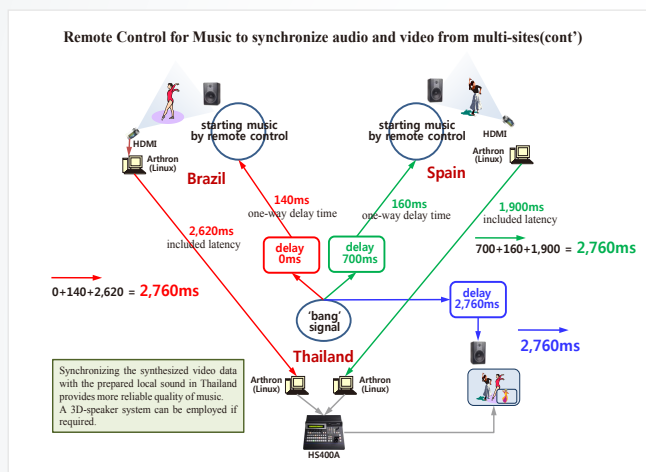
Three groups of dancers and musicians, and several different organisations – on three continents – collaborated to bring the live performance to an audience sitting in an auditorium in Daejeon, Korea.

The performers were in Barcelona (Spain), Prague (Czech Republic) and Salvador (Brazil). The venues were connected through a lattice of high-speed IP networks (all at least 100Mbps), with three streams of data being delivered to the endpoint in Daejeon (Korea).

The separate streams were then fed into purpose-built software – a Linux-based system called Arthron that handles everything necessary to combine the individual streams into one finished presentation.

Arthron provides a way of handling the data streams and combining them seamlessly into one highly polished performance. Its functions include:

- monitoring and managing all end-to-end network components
- enabling remote configuration of necessary hardware and software
- capturing, encoding and decoding the data
- replicating and distributing the streams across the various networks involved
- providing an access control and event management interface



Dancing across Oceans, 2012

The dancing queen series – networked music and dance performances – focused on using broadband networks for cultural applications, musical exchanges among communities with very different backgrounds, and solving technical issues in advanced networking. These cyber performances require co-operation from performers, audio and video technical staff, network engineers, and mixing specialists. TEIN is the essential underpinning for this artistic initiative and provides a bridge between artists and engineers.

*Professor Boncheol Goo
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Worldwide collaboration

e-Culture initiatives of this kind create unique opportunities for resourceful individuals based across the globe to collaborate in interdisciplinary cultural projects.

The success of the cyber-performance in Korea, for instance, was indeed a result of a high degree of dedication, co-operation and partnership among individuals, expertise and organisations. Cyber performances ought to be supported for the application of high speed network and beyond.

For more information

- TEIN: www.tein.asia / www.teincc.org
- KAIST GSCT: <http://ct.kaist.ac.kr/main.php>
- i2CAT: <http://www.i2cat.net>
- NASATI: www.vista.gov.vn
- RNP: <http://www.rnp.br>
- University of Malaya: www.um.edu.my
- KISTI: <http://www.kisti.re.kr>
- UniNET: www.uni.net.th
- MYREN: www.myren.net.my

TEIN4 – the research and education network for Asia-Pacific

- the fourth generation of the Trans-Eurasia Information Network – a high-speed, ultra-reliable IP network
- dedicated high capacity for the research, scientific, education and artistic communities across Asia-Pacific
- a gateway for global collaboration for more than 55 million users in Asia-Pacific

Showcasing the power of networking across Asia-Pacific

The cyber-performance, all designed to demonstrate the way in which high-speed IP networks can bring together artists from right across the world in an entirely new form of creative collaboration.

- Dancing across Oceans
a show in Thailand in February 2012, bringing together dancers and musicians from Brazil, Korea and Spain
- Dancing beyond Time
held in August 2013, a collaboration between performers in Brazil, Czech Republic and Spain, with an audience in Korea
- Dancing in Time
took place in May 2014 in Vietnam and featured performers in Korea and Malaysia
- Dancing in Space
premiered in August 2014 in Taiwan with dancers performing in the Czech Republic, Spain and the United States



"Imagination does not become great until human beings, given the courage and the strength, use it to create." Maria Montessori

Cyber-performance takes advantage of advanced network to exchange culture across the globe in real-time. It provides an opportunity to create, experiment and challenge the network. Performing in cyberspace will be the future stage of concerts and theatres. Cyber-performance is a genre that is here to stay.

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Dancing in Space, 2014

TEIN – the Trans-Eurasia Information Network – is a high speed network connecting scientists and researchers across the Asia-Pacific Region and, through direct connectivity with GÉANT, the pan-European network, to the entire global research and academic community. Co-founded by the EC and Asian partners, and managed by TEIN*CC, the network began operating in 2000 and is now in its fourth phase – TEIN4.

