

Networked Performing Arts

This is the home of the Networked Performing Arts space. Performing arts provide a unique application space for advanced networking technologies. This page is a place to collect information and applications that are unique to performing arts in advanced networking environments.

Applications

LOLA

[LOLA homepage](#)

The LOLA technology is a low latency, audio and videoconferencing technology that enables real-time, simultaneous, live musical performances across long distances over advanced research and education networks. LOLA was developed by [Conservatorio G. Tartini](#) in Trieste, Italy, and the [Italian Research & Education Network, GARR](#). Also, Stanford University's Center for Computer Research in Music and Acoustics is involved in development and research on human interaction and latency.

Read the [Internet2 feature about LOLA](#).

Costs as compiled by Paul Bauer of Northern Illinois University:

Bitflow ALT-PCE-AN1 Analog Frame Grabber = \$575
RME Hammerfall HDSP 9632 PCI Audio Interface \$550
Industrial Camera - B/W - (suggested model) Sony XCHR50 = \$575
OR Color - (suggested model) Hitachi KP-FD30 (plus AC adapter) = \$1,350
Custom Camera Cable - Possible to self-construct 50 foot cable for less than \$100 from VGA cable and appropriate connectors.

So that is a \$1,800 - \$2,500 add-on to a computer to be LOLA capable. Then at NIU we added the following optional equipment.

(highly recommended add-on vari-focal lens - Sony XCHR50 accepts C-mount lens. We obtained a Tamron 12VM412ASIR lens = \$100)

(Hitachi accepts CS mount - NIU obtained Fujinon FUDV10X7B2 DV10x7B-2 1 1/2" 7-70mm Lens = \$100)

(To allow flexibility, we also got the following RME BO9632XLRMKH balanced analog breakout cable for the HDSP9632 system = \$100)

[illegible]

If we are posting information on line about cables, we would also want to post information about Hirose and 62-pin d-sub connectors and male/female gender. Dan just found a supplier for the D-Sub connector you brought to Miami, and I ordered some. We'll know in a week or so if it is what we want. And also advice on how to assemble them - those 62 pins are close together!

Also found an ac adapter substitute for the Toshiba IK-TF5. Toshiba's was \$125-140, then I found mention of a substitute made by Elmo with the same specs and connector for about \$60, and then I found a new Elmo on Amazon for \$20.

DVTS

DVTS is a software platform that allows DV25 video to be transmitted over IP with no additional compression.

DVTS homepage at the WIDE Project.

Ultragrid

Ultragrid Wiki.

Conference XP

ConferenceXP homepage at University of Washington.

EchoDamp

EchoDamp is a software application for mixing audio and controlling echo in a videoconference without sacrificing audio quality and fidelity.

[EchoDamp homepage.](#)

JackTrip

JackTrip is a Linux and Mac OS X-based system used for multi-machine network performance over the Internet. It supports any number of channels (as many as the computer/network can handle) of bidirectional, high quality, uncompressed audio signal streaming.

[JackTrip repository hosted by CCRMA.](#)

The [TERENA Network Performing Arts Information page](#)

Tricks and Tips

Särestö Academy [Handbook for Musical Distance Education](#)

Excellent paper written by Noa Nakai, Technical Planner of the [Särestö Academy](#) in Helsinki, Finland. Be sure to check out their list of [common problems and their solutions](#) for H.323 video conferencing, as well as a very well documented [comparison of many existing video conferencing and streaming technologies](#).

The New World Symphony [technical information resources page](#)

An always useful set of documents and suggestions.

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