# Network Performing Arts Production Workshop

**22 TO 24 NOVEMBER**

2010

TERENA    Renater    INTERNET2    Consortium GARR    Education and Culture DG / Culture Programme    ircam Centre Pompidou
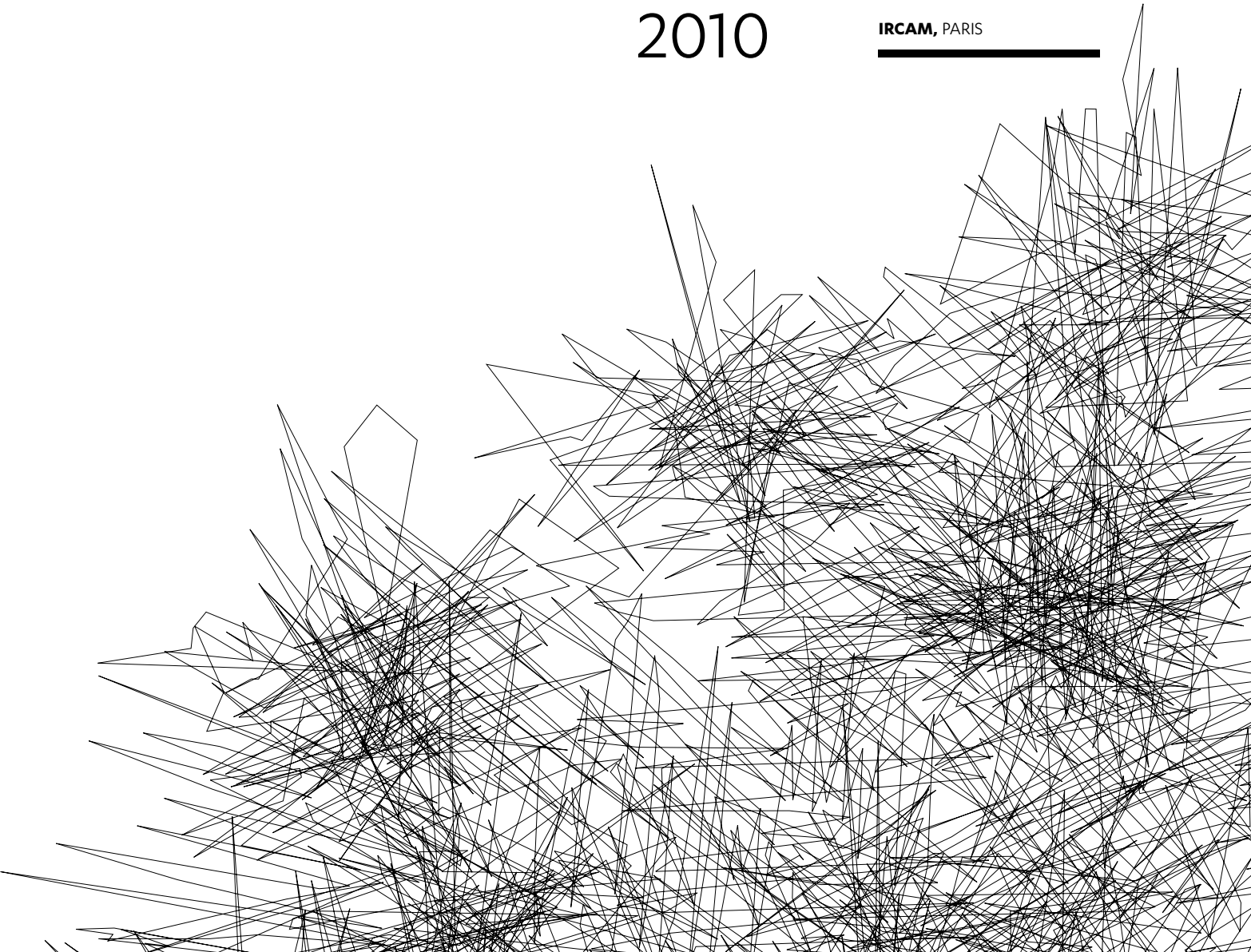
# Network Performing Arts Production Workshop

**22 TO 24 NOVEMBER**

2010

**IRCAM,** PARIS

# PROGRAM

# Monday 11.22.10

**IRCAM**

12H00 ■ **Registration & Lunch**

**IRCAM – Studio 5 and Shannon Hall**

13H00 – 13H15 ■ **Welcome**
Representatives of IRCAM, RENATER, TERENA, INTERNET2

▶ 13H15 – 13H45

**The Network Performing Arts Scene**
**Ann Doyle** – INTERNET2, **Valentino Cavalli** – TERENA,
**Andrew Gerzso** – IRCAM

▶ 13H45 – 14H30

**Useful Concepts for Network Performance**
**Alain Renaud** – Bournemouth University, UK

▶ 14H30 – 15H30

**What About the Sound? – Audio Issues in Sound-**
**Critical Video-Teleconferences**
**Brian Shepard** – University of Southern California, USA

15H30 – 15H45 ■ **Break**

▶ 15H45 – 16H30

**Current Tools Used in Networked Music Performance**
**Alain Renaud** – Bournemouth University, UK

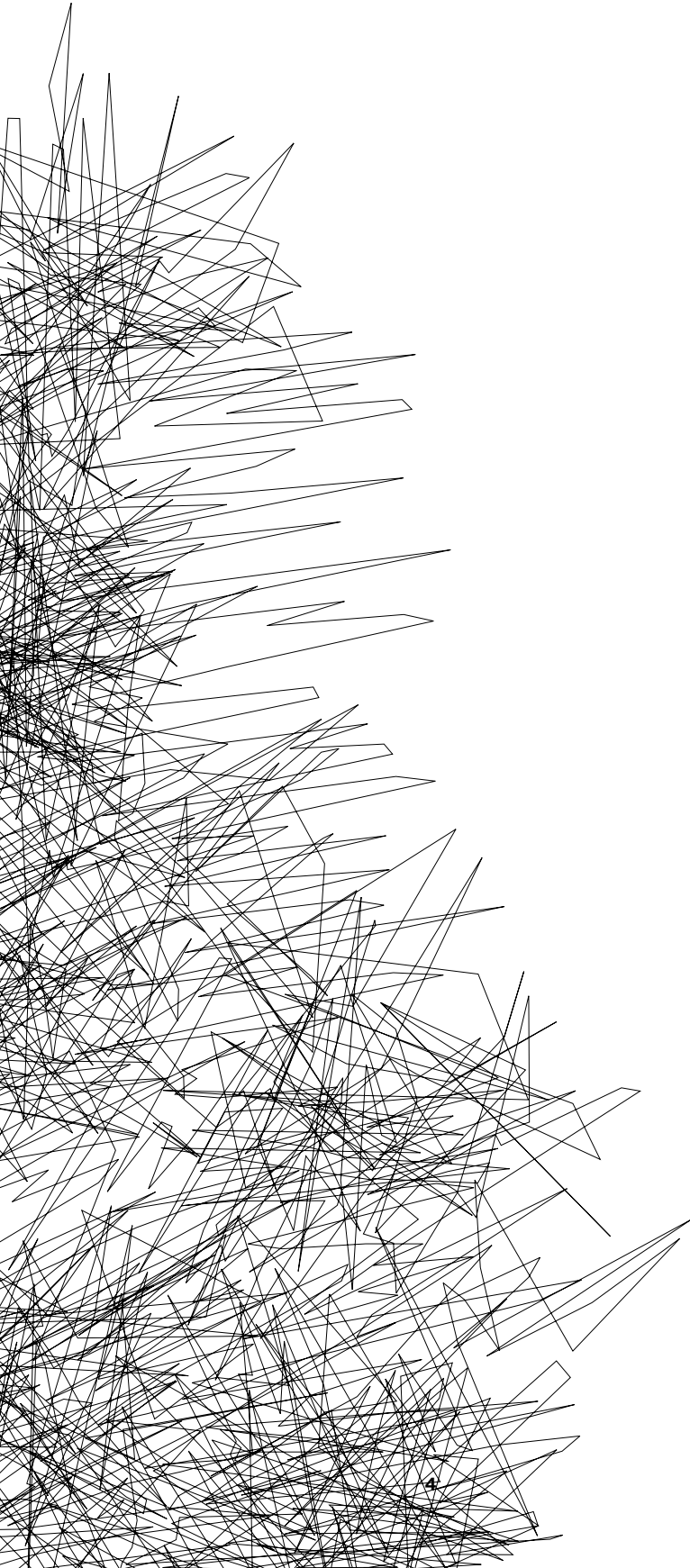▶ 16H30 – 17H30
**DVTS Overview**
**Ann Doyle** – INTERNET2

▶ 17H30 – 18H30
**Live Master Class & Lighting Issues with NWS**
**Jean Thorel** (conductor), **Justin Trieger** – NWS,
**Clyde Scott** – NWS (remote)

18H30 ■ **Q & A**

19H00 ■ **End of day**

# Tuesday 11.23.10

**IRCAM – Studio 5 and Shannon Hall**

▶ 10H00 – 10H45

**Real Time Analysis of Non-Verbal Expressive and Social Signals in Networked Performances**
**Antonio Camurri** – UGDIST, Genoa, Italy

▶ 10H45 – 11H30

**Sound Spatialisation Over the Network Using Ambisonics**
**Markus Noisternig** – IRCAM, Paris

11H30 – 12H00 ■ **Break**

▶ 12H00 – 13H00

**LOLA: Presentation and Hands on Session**
**Claudio Allocchio** – GARR, Italy, **Nicola Buso**, **Teresa Trevisan** and **Flavio Zaccaria** (remote) – Conservatorio G. Tartini Trieste, Italy

13H00 – 14H00 ■ **LUNCH**

▶ 14H00 – 14H45

**Visit of the *An Invisible Line* Installation**
**Antonio Camurri** & **Paolo Coletta** – UGDIST, Genoa, Italy

▶ 14H45 – 15H30

**What Codec for What Sound Quality?**
**Rémi Desmonet** – IRCAM

15H30 – 15H45 ■ **Break**

▶ 15H45 – 16H45

**Controlling Echo in a Musical Video-Teleconference**
**Brian Shepard** – University of Southern California, USA

▶ 16H45 – 17H30

**Conference XP: Presentation and Hands on Session**
**Claudio Allocchio** – GARR, Italy ; **Jose Feghali** – TCU Fort Worth (remote) and **Fred Videon** – Washington University Seattle (remote)

▶ 17H30 – 18H30

**DVTS: Hands on Session**
**Ann Doyle** – INTERNET2 & **Claudio Allochio** – GARR

20H30 ■ **Dinner** (Please sign up beforehand)

# Wednesday 11.24.10

**IRCAM – Stravinsky Hall**
**(session open to Forum IRCAM members)**

▶ 9H30 – 10H30
**Networking: Technical State of the Art**
**Laurent Gydé** (technical director RENATER)

▶ 10H30 – 11H30
**Networking: Artistic State of the Art**
**Alex Barchiesi** (video artist), **Nicola Buso** (composer), **Andrew Gerzso** – IRCAM

11H30 – 12H00 ■ **Break**

▶ 12H00 – 12H30
**Presentation of *NetTrike* (\*\*)**
**Bernhard Lang** (composer), **Christine Gaigg** (choreographer – remote)

▶ 12H30 – 13H00
**Presentation of *Zoom-Up* (\*\*) & *An Invisible Line***
**Andrea Cera** (composer)

13H00 ■ **Q & A Session + Wrap Up**

**END**

(\*\*) Works by Bernhard Lang, Christine Gaigg and Andrea Cera performed during the "Duplex" concert on the evenings of November 24 & 25 at IRCAM in the Espace de Projection concert hall at 20H00.

# Monday 11.22.10
PROGRAM

**IRCAM**

● 12H00 ■ **Registration & Lunch**

**IRCAM – Studio 5 and Shannon Hall**

● 13H00 – 13H15 ■ **Welcome**

Representatives of IRCAM, RENATER, TERENA, INTERNET2

▶ 13H15 – 13H45

## The Network Performing Arts Scene

**Ann Doyle** – INTERNET2, **Valentino Cavalli** – TERENA, **Andrew Gerzso** – IRCAM

During this presentation we will provide a brief overview of INTERNET2, with an emphasis on performing arts applications utilizing INTERNET2 and its global partner networks. Project highlights will include master classes, auditions, rehearsals, multi-site performance events, and HD broadcast quality extension of live performance to remote audiences.

▶ 13H45 – 14H30

## Useful Concepts for Network Performance

**Alain Renaud** – Bournemouth University, UK

This presentation provides an overview of strategies for performing interactively over the network. The talk focuses on various aspects of cueing over the network and the technologies used to deal with the inherent latency of the network medium. The presentation is based on more than six years of practice-based research in the field of network music performance with collaborating nodes scattered all around the globe. It focuses on the activities of the NetVs.Net collective, a group of musicians who only perform over the network as well as on the work of networked performers, the Jakson4s.

▶ 14H30 – 15H30

## What About the Sound?
## Audio Issues in Sound-Critical Video-Teleconferences

**Brian Shepard** – University of Southern California, USA

Most current video-teleconference (VTC) systems are not designed to handle the audio frequency-content needs of sound-critical sessions like musical and dramatic performances. Even the few systems that can accommodate these needs usually ruin the sound quality by applying speech-specific echo control to the audio. This presentation will discuss the many issues related to audio in sound-critical VTCs where the quality of the sound is of utmost importance. Techniques will be shown, described, and explained that allow VTC participants to remove echo from their sessions while maintaining full audio fidelity. Part of the session will include a demonstration of EchoDamp, the new echo-control software written specifically for the musical VTC environment.

# Monday 11.22.10

● 15H30 – 15H45 ■ **Break**

▶ 15H45 – 16H30
## Current Tools Used in Networked Music Performance

**Alain Renaud** – Bournemouth University, UK

This workshop offers participants a set of hands-on sessions along with a presentation of the most used audio, video and messaging technologies used by the NMP community to interact over the network. The workshop covers technologies and products such as JackTrip, the Master Cue Generator (MCG), an interactive NMP tool built with Max/MSP and various techniques to display network cues in multi-site performances. The workshop will be linked live to another site in order to demonstrate and discuss paradigms inherent to NMP.

▶ 16H30 – 17H30
## DVTS Overview

**Ann Doyle** – INTERNET2

During this session an overview of DVTS (Digital Video Transport System) will be given including its history, components and specifications, bandwidth requirements, and broad adoption and uses in the global performing arts community.

▶ 17H30 – 18H30
## Live Master Class & Lighting Issues with NWS

**Jean Thorel** (conductor), **Justin Trieger** NWS, **Clyde Scott** NWS (remote)

The New World Symphony, America's only full-time orchestral academy, prepares gifted graduates of prestigious music programs for successful careers in orchestras and ensembles. As part of their instruction, our orchestra members or "fellows" receive mentoring from the foremost musicians around the globe, both in-person and through various forms of hi-bandwidth video conferencing applications. This demonstration of an online master class uses an application called DVTS, which streams and receives raw DV-formatted audio and video at rate of 30 Mbps. The important question of lighting will also be covered during this session.

● 18H30 ■ **Q & A**

● 19H00 ■ **End of day**

# Tuesday 11.23.10
**PROGRAM**

**IRCAM – Studio 5 and Shannon Hall**

▶ 10H00 – 10H45

### Real Time Analysis of Non-Verbal Expressive and Social Signals in Networked Performances

**Antonio Camurri** – UGDIST, Genoa, Italy

This lecture presents research activities at Casa Paganini on real-time systems for networked interaction and communication of non-verbal expressive and social behavior, in the framework of the EU Culture 2007 Project CO-ME-DI-A. Examples of networked interaction based on the real-time analysis and communication of non-verbal expressive and social signals (e.g., entrainment, dominance) in the EyesWeb XMI platform are introduced, in the framework of the recently developed new version of the networked installation *An Invisible Line* of Corrado Canepa and Andrea Cera. Perspectives on future developments and on the impact of this research in artistic as well as in ICT projects are also discussed.

▶ 10H45 – 11H30

### Sound Spatialisation Over the Network Using Ambisonics

**Markus Noisternig** – IRCAM, Paris

The fast evolution of the Internet and digital audio networking technologies has strongly influenced a wide number of domains, including entertainment, broadcasting, and music performance. The limiting factor is typically the available bandwidth of the network; hence, a trade-off between audio quality, network latency and transmission bandwidth has to be made. To enrich networked audio applications with a surround sound experience efficient multi-channel audio transmission formats and coding technologies are required. Ambisonics has, in recent years, become increasingly important for capturing and reproducing 3D surround sound. This talk gives a brief introduction to Ambisonics theory and discusses its applicability as a scalable format for networked streamed audio.

● 11H30 – 12H00 ■ **Break**

▶ 12H00 – 13H00

### LOLA: Presentation and Hands on Session

**Claudio Allocchio** – GARR, Italy, **Nicola Buso**, **Teresa Trevisan** and **Flavio Zaccaria** (remote) – Conservatorio G. Tartini Trieste, Italy

In this session we will present LOLA, the "LOw LAtency videostreaming system" that has been designed to minimize the audio/video latency to a level which allows remote musicians (and other performing arts people) to interact in real-time even over a long physical distance. We will describe the implementation and requirements of LOLA, its future developments, and challenges. A full LOLA installation will be available, and we will demonstrate it live, with two pianists, one at IRCAM and the other at a remote site, playing together. We will also play with the LOLA environment parameters, to see how they influence the interaction for the musicians.

# **Tuesday** 11.23.10

● 13H00 – 14H00 ■ **Lunch**

▶ 14H00 – 14H45
### **Visit of the *An Invisible Line* Installation**

**Antonio Camurri** & **Paolo Coletta** – UGDIST, Genoa, Italy

*An Invisible Line*, based on and idea by Corrado Canepa, is a collaborative project between IRCAM (Paris), Casa Paganini (Genoa) the Hochschule für Musik und Theater (Hamburg), that investigates the interconnection between human expressive full-body movement and gesture analysis as well as sound and interface design for creating shared networked social experiences. This project was implemented in the form of a two-site installation where the participants will interact so as to "get tuned together" (or "de-tuned") via the machine's observation of their gestural behavior.

▶ 14H45 – 15H30
### **What Codec for What Sound Quality?**

**Rémi Desmonet** – IRCAM

This presentation provides an overview of available audio codecs and focuses on their use in a networking situation. We will cover topics such as audio quality, encoding time, stream bitrate, as well as how to adapt settings so as to acheive the best compromise between latency and quality depending of the needs of a particular event.

● 15H30 – 15H45 ■ **Break**

▶ 15H45 – 16H45
### **Controlling Echo in a Musical Video-Teleconference**

**Brian Shepard** – University of Southern California, USA

This session will feature demonstrations of proven techniques for controlling audio echo in a video-teleconference (VTC) without compromising the sound quality. Issues of microphone and loudspeaker selection and placement as well as strategies for optimizing the VTC room will be presented and demonstrated. The session will also include a demonstration of the free software application EchoDamp, the new audio mixing and echo control software designed specifically for musical Video-Teleconferences on advanced, high-performance networks. (*Attendees are strongly encouraged to request a license for EchoDamp (http://echodamp.com/getechodamp.html) in advance of the conference so that they may have it installed to use during the presentation.*)

# Tuesday 11.23.10

▶ 16H45 – 17H30

## Conference XP: Presentation and Hands on Session

**Claudio Allocchio** – GARR, Italy, **Jose Feghali** – TCU Fort Worth (remote), and
**Fred Videon** – Washington University Seattle (remote)

In this session CXP features will be described in details, together with a comparison with other systems (e.g. DVTS, LOLA, etc.). A full installation will also be available and a session with remote partners will be established to give a live demonstration of its features. During the hands-on session, we will play with CXP configurations, to see the various possible setups, and check their effect with the collaboration of the remote partners.

▶ 17H30 – 18H30

## DVTS: Hands on Session

**Ann Doyle** – INTERNET2 & **Claudio Allochio** – GARR

In this session we will implement the deployment of a DVTS installation. Participants will practice in installing, configuring and running DVTS hardware and software, both in Unicast and Multicast mode, and in Standard Definition and High Definition resolutions. We will also show the most common problems and issues which can happen, learn to identify them and apply proper troubleshooting and fixes. *(Participants should have with them their own laptop – Windows XP is suggested – and their DV camera to derive the most benefit. This is a real "hands-on" session, be prepared to handle cables, plugs, etc.)*

● 20H30 ■ **Dinner** (Please sign up beforehand)

# **Wednesday** 11.24.10
**PROGRAM**

**IRCAM – Studio 5 and Stravinsky Hall**
**(session open to Forum IRCAM members)**

▶ 9H30 – 10H30

## **Networking: Technical State of the Art**

**Laurent Gydé** (technical director – RENATER)

The network is a set of infrastructures and services that need a successful integration in order to provide the expected user experience. This presentation will be an overview of the major recent technical developments in the field, related to the numerous opportunities for present or future usages of networks. It also will be pointed that networks themselves are continually evolving by taking new forms. Emphasis will be placed on the necessary coming and going between the vision of the network engineer and the one of the user. The first is always aiming to meet the needs of the second but in order to develop innovative applications; advanced users must also understand networks in their most technical aspects.

▶ 10H30 – 11H30

## **Networking: Artistic State of the Art**

**Alex Barchiesi** (video artist), **Nicola Buso** (composer), **Andrew Gerzso** (IRCAM)

1) Caotica_Lex – a Case of Distr-active Artwork – a Distributed
Approach to Interactivity in Visual Arts.
We will present an overview of the evolution of artistic creation in net systems from netart to modern times, while asking such questions as: is it possible to go beyond the "beyond the interface"? This will include an overview of the network as the key point interface and substrate for a new frontier of arts in the age of ubiquitous networking with an examination of the phenomenology of modern instruments for visual and conceptual arts.
2) *Terza prattica: un troisième espace pour la musique electroacoustique?* (*)
In music history the space becomes an element more and more important both in composition (interior space) and in performance (exterior space); the network extends and makes more complex the idea of musical space, enhancing the sense
of composition, the performance praxis and their relationships.
*(*) Terza prattica: a Third Space for Electro-acoustic Music?*

● 11H30 – 12H00 ■ **Break**

# Wednesday 11.24.10
PROGRAM

▶ 12H00 – 12H30
## Presentation of *NetTrike* (**)

**Bernhard Lang** (composer), **Christine Gaigg** (choreographer – remote)

*NetTrike* is a composition for two pairs of performers, two performing choreographers, two sound-plates, surround sound plus two video loop generators. This work is an extension of a previous work *V-trike* and is the result of a collaboration among Christine Gaigg, the media artist Winfried Ritsch, the dancers Veronika Zott and Max Fossati, and the choreographer Alban Richard.

During the performance the choreographers on stage are sampling the performers both visually and sonically. The performers then react to the resulting loops thereby creating a complex feedback system. Exchanging the sonic and video loops via a network matrix further increases the complexity of this interaction. The score itself is mainly made up of extensive charts defining all the durations and qualities of the different loops used in the piece, including the modulation processes resulting in the jittering of the audio and visual loops.

▶ 12H30 – 13H00
## Presentation of *Zoom-Up* (**) & *An Invisible Line*

**Andrea Cera** (composer)

*Zoom Up* is a distant dialogue between two musicians – one in Graz, the other in Paris – connected by a stream of digital data over the network. The illusion of proximity brought about by the streaming technologies contrast with the fictional character of the sounds that are the basis of this dialogue.

The technical setup of *Zoom Up* functions like a four handed instrument. The two instrumentalists play the same program, a computer version of a "prepared piano" that evolves over time as the score is played. Sometimes the sounds become uncomfortably dissociated with the sounds and gestures we normally associate with the piano.

The setup thus allows narrowing or amplifying the distance between the performers. Sometimes they appear to play in the same place; sometimes they seem too distant joined and by a tenuous link that becomes almost invisible; sometimes so near that the performance is lost in the small movements of the hands.

*(See abstract for Invisible Line above.)*

● 13H00 ■ **Q & A Session + Wrap Up**

● **End**

(**) Works by Bernhard Lang, Christine Gaigg and Andrea Cera performed during the "Duplex" concert on the evenings November of 24 & 25 at IRCAM in the Espace de Projection concert hall at 20H00.

## Claudio Allocchio

studied astrophysics and particle physics, but also music (piano). In 1985 he started his computer networking activities at CERN and then returned to Trieste (1988). Among the founders of GARR NREN, he managed the COSINE mail gateway services (early 90s) and the Italian Naming Authority (".it" regulator). Since 1991, he is a member of the application area directorate at IETF. He is the GARR senior technical director for advanced applications and security areas.

## Alex Barchiesi

has a degree in physics (electronics) from the University of Rome La Sapienza and a Phd in Particle physics. He has worked in Chicago (FermiLab), Zurigo (PSI), and in Rome (Università La Sapienza – INFN- ESA). He has several years of experience in the field of GRID distributed computing for high energy physics, has taught in Rome's art academy and realizes several projects of interactive and distributed art with the bLuELab art project. Since 2009, he works and lives in Berlin. Some of his main exhibitions: Smart Urban Stage – Auditorium parco della musica Rome, MACRO (museum of contemporary art Rome), Network Umanitatis – University of Naples, ViolAzione – La Porta Blu Gallery Rome, The biggest stranger: yourself – CELL63 Gallery Berlin.

## Nicola Buso

After a piano diploma, and a degree in philosophy (Università Ca-R Foscari, Venezia), Nicola Buso received his diploma in electronic music (teacher: A. Vidolin), and a PhD in musicology (tutor: A. Orcalli). He collaborated with the Archivio L. Nono (Venice) and taught electronic music in the Conservatorio Tartini (Trieste). As a member of the ensemble L'arsenale, his compositions have been performed in Italy, Poland, Germany, and the United States. His current interests deal with live coding and hyper-textual hermeneutics.

## Antonio Camurri

is associate professor at DIST, University of Genoa. His research is on multimodal interfaces, sound and music computing, computational models of emotions and of non-verbal social behavior, interactive systems for theatre, music, dance, museums, and for therapy and rehabilitation. Founder and scientific director of InfoMus Lab and of InfoMus – Casa Paganini, he coordinates and is local project manager of EU projects and industry contracts.

## Valentino Cavalli

is the Chief Technical Officer of TERENA. He is responsible for managing the Technical Programme and the technical staff at the Secretariat.Valentino is currently responsible for the coordination of RTD activities and the support to research and education networking in less advanced European countries. These activities are partly supported by the GEANT project of the European Commission. In the past years Valentino has been involved in a number of projects addressing network connectivity and services for the research and education community. He was the project manager of a project to assess the feasibility of acquiring dark fiber by NRENs in southeast Europe. Valentino has been working for TERENA since May 1999 and initially joined as one of the Project Development Officers. Before joining TERENA, he worked as Research Manager for Omega, an Italian IT company, where he was responsible for a number of projects under the European Commission Fourth Framework Programme.

## Andrea Cera

studied piano and composition (Conservatorio di Padova, Italy) and computer music (IRCAM Cursus). He produced music for choreographers (during a long series of collaborations with Hervé Robbe at the Centre chorégraphique national du Havre), sound installations (*Innig*, and *D-Day*, at the Centre Georges Pompidou; *NightRun and Reactive Ambient Music* at the Fresnoy – Studio in Lille-Tourcoing; *Nature and Undertones* for many institutions and art centers in Italy), for ensemble (Court-circuit, Nouvelle Cuisine Big Band). He has worked on research projects with IRCAM (Paris), NOTAM (Oslo), AGON (Milano). He lives in Malo, a small town near Vicenza, Italy.

## Rémi Desmonet

Following a master's degree in computer science and networking between Dijon (University of Burgundy), Liverpool (Liverpool University) and Leipzig (Hochschule für Technik, Wirtschaft und Kultur), Rémi Desmonet worked for three years on audio/video encoding and streaming over networks (with Orange, SFR, and NRJ). He joined IRCAM in 2008, in the Department for the Coordination of Scientific and Musical Research to work on networking performances in the context of the CO-ME-DI-A project.

## Ann Doyle

directs INTERNET2's Arts and Humanities Initiatives. Her accomplishments include working with campuses across the U.S. and internationally to produce master classes and performance events enabled by high-speed networking, including serving as executive producer of the two largest collaborations in the performing arts over INTERNET2. Ann Doyle has been a keynote speaker at Europe's TERENA Networking conference, Ireland's HEAnet's annual conference, Italy's GARR annual conference, the International Council of Fine Arts Deans, the National Association of Schools of Music in the U.S., and numerous campuses interested in the application of INTERNET2 in performing arts and humanities education. Ann Doyle has a Master's degree in Higher Education Administration from the University of Michigan. She is also known in the greater Detroit metropolitan area for her career as a singer/songwriter and recording artist.

## Christine Gaigg

is a freelance choreographer in Vienna. She holds a PhD in philosophy and completed her dance and choreography training at the School for New Dance Development in Amsterdam. In 1994 she founded the company Christine Gaigg /2nd Nature. Since 2004 she has been collaborating with composer Bernhard Lang. They created a series of works based on the research of sampling/looping in movement and sound: *TRIKE* spring, summer, winter" (2004), *TRIKE* (2005), *V-TRIKE* (2007) was first shown at Kaaitheater Brussels and premiered in full version at Steirischer Herbst Musikprotokoll 2008, *TrikeDoubleThree* premiered at the New Music Festival Wien Modern in 2009. Next to her artistic work she is lecturing on performance theory at the University of Vienna.

## Andrew Gerzso

has been a member of IRCAM's permanent staff since 1977 holding a number of positions beginning as researcher and leading up to his current position as Director of the Department for the Coordination of Scientific and Musical Research. The department manages musical research, the IRCAM Forum (the institute's software user group) and several documentation projects. Since 1980 he has been a close collaborator of Pierre Boulez at IRCAM (for whom he did the electro-acoustic realization for *Répons* in 1981, *Dialogue de l'Ombre Double* in 1985, *Explosante-fixe* in 1991 and *Anthèmes 2* in 1997) and at the College de France (for the annual seminars until 1995). He is the coordinator of the European project CO-ME-DI-A that explores the use of high speed networks in music.

## Laurent Gydé

is Chief Technical Officer of RENATER, the French National Research and Education Network (NREN). Before joining RENATER, he's been working for more than 20 years in the IT and networking fields for French universities and research agencies.

## Bernhard Lang

is a composer whose works have performed at the Steirische Herbst Festival, at the Moscow Alternativa Festival and the Moscow Modern Festival, Biennale Hannover, Tage Absoluter Musik Allentsteig I and II, Klangarten I and IV, Resistance Fluctuation Los Angeles, Darmstädter Ferienkurse, Salzburger Festspiele, Wien Modern, Donaueschingen, Witten and many others. In 1998 he was a guest lecturer in Peter Weibels Media class in Vienna. In 2006 he was featured artist of the Wien Modern Festival in Vienna. At the Institute for Electronic Music Graz he developed the Loop-Generator and the Visual Loop Generator with Winfried Ritsch and Thomas Musil. He has various sound installations in his list of works, among them *Schwarze Bänder* Musica Viva 2005. Since 2003 there have been a number of collaborations with various choreographers: Xavier Le Roy, Christine Gaigg and Willi Dorner. His main interest since 1999 is music theater, derived from his interpretation of the ideas of difference/repetition: *Theater of Repetitions* 2003, *I hate Mozart* 2006, *The Old Man from the Mountain* 2007.

## Markus Noisternig

works in the field of acoustics, audio signal processing, and music and media technology. He is an active researcher and artist on an international level and takes both an artistic and scientific interest in matters of sound and music. His current projects include immersive and augmented audio environments in the context of contemporary music performance and multimedia art.

## Dr. Alain Renaud

is a lecturer in Music and Audio Technology at Bournemouth University, England and holds a PhD from the Sonic Arts Research Centre in Belfast, Northern Ireland. His research focuses on the development of networked music performance systems with an emphasis on the creation of strategies to interact over a network musically and the notion of shared networked acoustic spaces. He performs regularly over the network with the NetVs.Net collective and the Jackson4s. Alain Reanud held a residency at the Banff Centre for the Art, The Center for Computer Research in Music and Acoustics (CCRMA) at Stanford University, where he was a visiting scholar in 2007. He is also involved as an advisor in the EU network performance project, CO-ME-DI-A.

## Dr. Brian Shepard

is Assistant Professor of Pedagogical Technology in the Thornton School of Music at the University of Southern California, where he teaches courses in Music Technology, Composition, and Music Theory. He is a composer of both acoustic and electronic art music, and is the creator and author of *EchoDamp*, the only audio mixing and echo control software designed specifically for musical videoteleconferences on advanced, high-performance networks, and the winner of the 2010 IDEA Award from INTERNET2.

## Jean Thorel

studied orchestral conducting with Jean-Jacques Werner and Léon Barzin, and ballet conducting with Antal Dorati and André Girard. He won prizes in harmony and counterpoint at the Paris National Conservatory. In 1985 he became permanent conductor of the Stringendo Orchestral Ensemble (Paris) and, with the support of Jean-Claude Casadesus, he was awarded the Vocation Foundation Prize in 1989. Since January 2005, Stringendo is "orchestra in residence" in the city of Orly. Since 1994, Thorel has been in ever increasing demand throughout Scandinavia, in Finland and in Poland, his versatility enabling him to conduct both ballet and multi-facetted concert programmes. He is a regular guest conductor at prestigious festivals of contemporary music. Starting from the 2008/09 concert season Jean Thorel has also been appointed Chief Conductor of the City Chamber Orchestra of Hong Kong, which with its thirty musicians is the only chamber orchestra in the Asian region with a regular subscription season.

## Justin Trieger

is the INTERNET2 Systems Manager for the New World Symphony in Miami Beach, FL. A graduate of New York University, Justin is an experienced audio engineer, composer, network technologist and amateur photographer.

# Events of the week at IRCAM

## FORUM WORKSHOPS

From Wednesday the 24th to Friday the 26th of November
Annual meeting of IRCAM software users, professionals, and IRCAM research teams

For non-members - registration fee: 150€
For NPAPW participants - registration fee: 50€

> **Information and Registration:**
> http://forumnet.ircam.fr
> Phone 0144784962
> admin-forum@ircam.fr

## CO-ME-Di-A PARiS/GRAZ « DUPLEX » CONCERT

Wednesday the 24th and Thursday 25th at 20h00

The Wednesday 24th concert **is reserved for NPAPW participants**
and **Forum members only**.

> **Information and Registration:**
> www.ircam.fr
> Phone 0144781240
> Murielle.Ducas@ircam.fr

## PROFESSiONAL-LEVEL COURSES

Max for Developers - Instruction **in English**
From Saturday the 27th to Monday the 29th of November
David Zicarelli, Jeremy Bernstein, Joshua Kit Clayton, Emmanuel Jourdan
(Cycling'74 and IRCAM)

> **Information and Registration:**
> www.ircam.fr
> info-pedagogie@ircam.fr

# NOTES

**NPAPW-2010.IRCAM.FR**