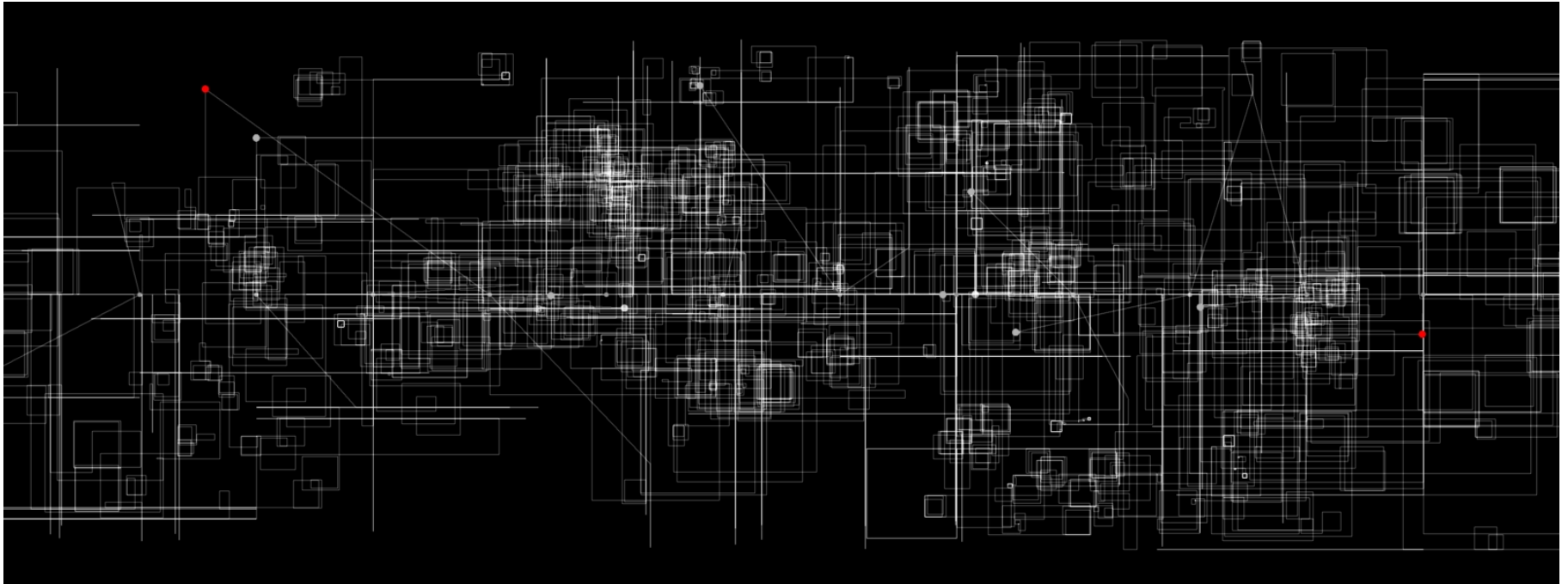


Heart Chamber Orchestra

a project by TERMINALBEACH initiated and produced by TEKS - Trondheim Electronic Arts Centre in cooperation with TRONDHEIM SINFONIETTA



Heart Chamber Orchestra is an audiovisual performance with an orchestra of 12 classical musicians and the artist duo TERMINALBEACH. Using their heartbeats, the musicians control a computer composition and visualization environment. The musical score is generated in real time by the heartbeats of the musicians. They read and play this score from a computer screen placed in front of them. HCO forms a structure where music literally “comes from the heart”

<http://heartchamberorchestra.org/docu.html>

HCO background and introduction

In Western culture we consider the heart to be the place for certain feelings. This is reflected in language, with phrases like “to lose one’s heart to” or “to lacerate the heart”. The heartbeat also reflects the physical state of the body. It pumps heavily if the body is under physical tension, and when it starts to beat very fast it can indicate fear, stress or excitement. Slow beats show a state of relaxation or sleep. Through meditation or biofeedback techniques one can manipulate these bodily states. The heart is a vital organ and for some it is the very place of life itself – a container of a metaphysical soul.

Musicians, Sensors and Computers

The musicians are equipped with ECG (electrocardiogram) sensors. A computer monitors and analyses the state of these 12 hearts in real time. The acquired information is used to compose a musical score with the aid of computer software. It is a living score dependent on the state of the hearts. While the musicians are playing, their heartbeats influence and change the composition and vice versa. The musicians and the electronic composition are linked via the hearts in a circular motion, a feedback structure. The emerging music evolves entirely during the performance. The resulting music is the expression of this process and of an organism forming itself from the circular interplay of the individual musicians and the machine.

Transformation

HCO is oriented toward traditional musical terminology but carries out a transformation with regard to content and form. The traditional chamber orchestra is a small orchestra of soloists without a conductor. TERMINALBEACH expands this concept by adding the role of the composer to it. The former interpreting musician, solely a hermeneut, becomes an actor by composing and interpreting at the same time. There is no pre-existing written score. The score is a temporary one and generated in the very moment of the heartbeats. Therefore a rehearsal, in the original sense of the word, is not possible. For the HCO, a rehearsal means learning to master the real time process.

Sonification and Visualisation

HCO takes the idea of a traditional Symphony as a framework. Each of the four movements and their forms will illuminate the ongoing process from different sides. Imagery forms an integral part of the HCO. Computer graphics generated from the HCO data establish a different sensual and narrative layer. The interplay of audio and video allows for a synaesthetic experience for the audience. The heartbeats of the musicians and their

relation to each other become audible and visible.

The Art of Implication

HCO is not a composition in the traditional sense. It draws its inspiration from music, art and science. This interdisciplinary approach pushes and questions the boundaries of the contemporary practice within these disciplines. The creative act does not create an object but implements a space of possibilities, a structure for processes to evolve. There is no clear distinction between author and interpreter, but the emergence of a reading/writing continuum with no territory for a single author.

The Technology

The sensor network consists of 12 individual sensors; each one is fitted onto the body of a musician. A computer receives the heartbeat data. Software analyses the data and generates via different algorithms the real-time musical score for the musicians, the electronic sounds and the computer graphic visualization

TERMINALBEACH

TERMINALBEACH is a collaboration between PURE (Vienna/Berlin) and BERGER (Helsinki) that began in 2002. TERMINALBEACH is involved in the creating audiovisual entities. Linked performance environments intertwine abstract sonic narrations with a strong visual language of morphing surfaces to create a synaesthetic experience.

PURE is an artist born in Austria. He lives and works in Berlin/Germany. Since the second half of the 90’s PURE has been working mostly in the field of abstract listening music and sound for performances. His background is in DJing and producing various styles of electronic music - since 1991, with more than 20 releases on labels such as MEGO, STAALPLAAT, or his own label DOC. He also works with orchestras, solo musicians, composers and dancers. <http://pure.test.at>

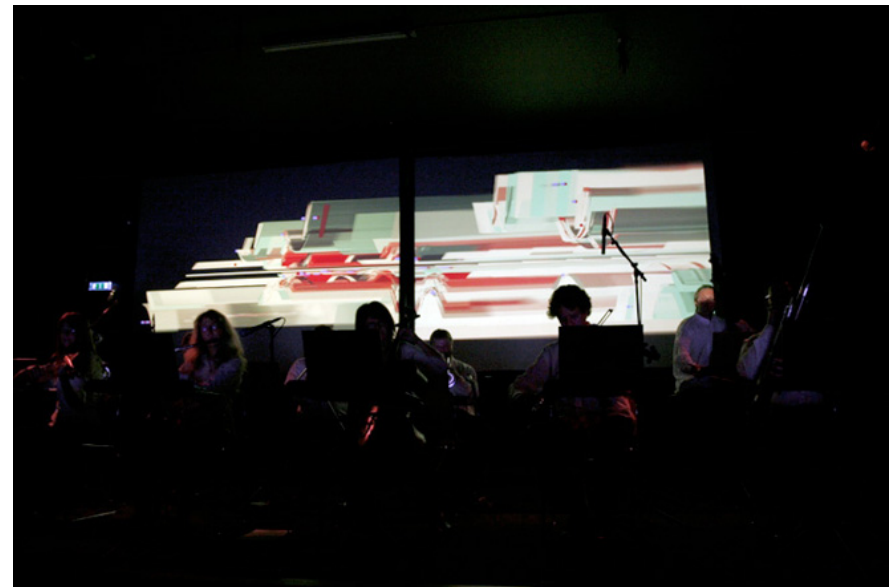
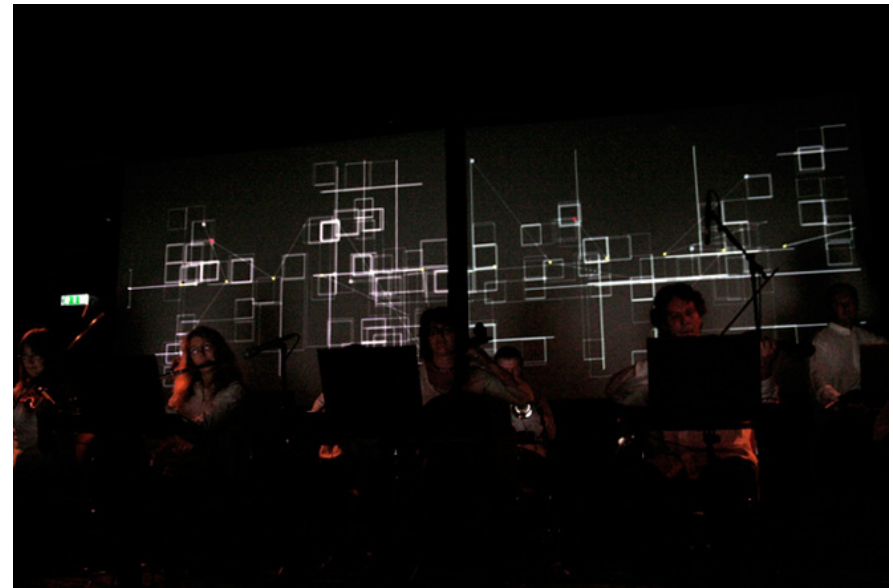
BERGER is an artist and cultural worker born in Austria. He lives and works in Helsinki, Finland. BERGER’s background is in communication engineering and philosophy. He works with installations and performances; in the latter, BERGER deals with sound and images in a very similar manner. Unusual modes of transformation create tight and intense compositions of sound, noise and light. <http://randomseed.org>

The Heart Chamber Orchestra performed

- 15th of October 2006 at the Matchmaking in Trondheim Norway
- 25th+26th of September 2009 at Todays Art in Den Haag Netherlands
- 8th of October 2009 at Musikprotokoll im Steirischen Herbst Graz Austria
- 28th of March 2010 at Pixelache Festival Helsinki Finland

Technical requirements

- Stage minimum 10*6m
- 12 Orchestra musicians
- 12 Laptops: 15", MAC or WinXP, WLAN
- 12 Stands/pults for laptops
- 12 Power supplies for laptop
- 11 Chairs for musicians
- 1 Stool for the double bass player
- 12 Microphones + stands for the instruments, microphones selection depending on instruments
- 1 Workspace table for terminalbeach 2*1m: to be positioned close to the PA mixing table (behind the audience)
- 1 Sufficiently long cat45 lan cable from the musicians stage to the to the audio mixer
- 1 PA + subs sufficient for the space, 12 mic inputs, 1 stereo input 1 stereo output
- 2 Projectors 3500 Ansi Lumen, same model, with with same lamp hour usage, each will be driven with 800*600 to give a single 1600*600 projection.
- 2 Projection screens in format 4m*3m
- 3 Flat screen monitors 1024*768
- 1 Workroom with tables and power cords, good stereo audio setup with sub woofer as workspace during production
- 12 Tightly focused DMX controllable spots mounted overhead of the musicians



HCO Trondheim 2006