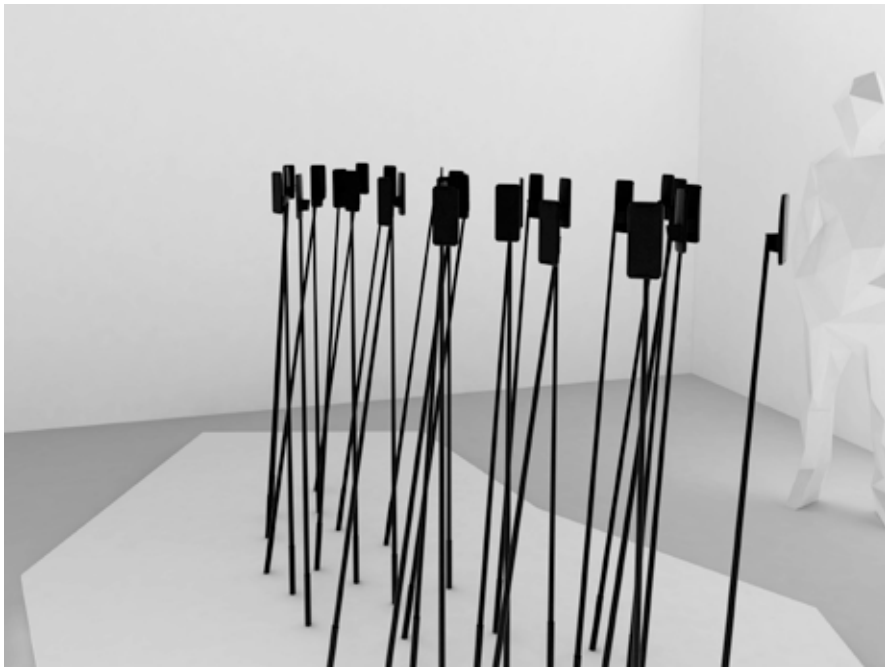
SMARTLAND

DIVERTIMENTO



AN INTERACTIVE AND PARTICIPATIVE INSTALLATION
IN A SOUND AND VISUAL ECOSYSTEM

S. Borrel, C. Lebreton, RANDOM (lab)

MUSEE DES CONFLUENCES, LYON,
from 1st to 27th March 2016 (creation)

LUX SCÈNE NATIONALE DE VALENCE,
from 31st March to 23rd April 2016
during Biennale Musiques en Scène 2016

Production :
Grame, Centre national de création musicale
RANDOM (lab) de l'ESADSE, Ecole Supérieure d'art et design Saint-Etienne
Lux-scène nationale de Valence
With the support of Fonds [SCAN] Rhône-Alpes

Update : 2016, Feb.

THE CREATIVE TEAM

Stéphane Borrel, composer

Christophe Lebreton, Smartland concept, design and development of Faust apps

RANDOM (lab) – ESADSE, Design of screens and structure
Team : Johann Aussage, Damien Baïs, François Brument, David-Olivier Lartigaud, Jacques-Daniel Pillon

Yann Orlarey, language Faust conception

SMARTLAND
divertimento

THE ARTISTIC PROJECT AXES

SMARTLAND IS A PARTICIPATIVE INSTALLATION IN A SOUND AND DIGITAL ECOSYSTEM

A participatory work, towards a creative society

The «digital» in its entirety and overhaul of uses, is often associated with the idea of a social «creative» revolution.

«Digital is transforming society and democracy ... The society we want, a creative society, is a society that gives everyone the opportunity and ability, not only to build their own destiny, but also to act for the common good» (« The digital program in the French Socialist Party Project»- June 2011 - Laboratory of ideas).

What about specifically the «creativity» associated to digital? Access to tools and shared platforms is certainly necessary to achieve a society in pursuit of equity and solidarity. In the arts, how can these tools define a new area of stimulation and radiation of creation? Arise, among other issues, the report to the artistic object (virtual, augmented, connected or not) through more participatory and interactive approaches.

«SmartFaust» is one answer: this term refers to both as a participatory concert, and the name of an app for smartphones (creation Biennale Musiques en Scène 2014). SmartFaust is based on these technologies developed by Grame and Faust language (Grame research laboratory).

Commissioned works for all, for ensemble and choir of smartphones, educational purposes to works, or performance combining drones and smartphones were created (Xavier Garcia / Biennale Musiques en Scène 2014) or are being RANDOM (lab) / Design Biennial, Momeludies, creations Qin Yi Electronic Music artists weekend Shanghai Jinyao Lin / Taipei Digital Art Festival.

Meetings entitled «SmartAct» are organized in Lyon ENSBA on this subject in February 2015.

James Giroudon

«Smartland»: a sound and visual ecosystem based on interconnectivity of digital objects by electroacoustic

From embedded digital audio apps for smartphones, the main concept is to bring Smartland musical behaviors through electro-acoustic networks. Therefore, communication between these objects is done by the acoustic sound from the speakers and microphones built into every smartphone. This constraint is used to define a musical ecosystem whose behavior is particularly dependent on its spatial organization and the quality of the sound environment. The mere presence of a new body within *Smartland* can change the balance and evolution of this environment. With its own smartphone and app Smartland previously downloaded, the public can also participate and interact in harmony with the sound ecosystem. It is also conceivable by extension that a group of people can independently and outside of the facility, recreate a new Smartland. From this concept the idea is to educate the public behavior with respect to a new environment, without trying at all costs to impose it. The variations of this concept are endless, leaving considerable room for research and artistic creation both in terms of sound, visual, design, architecture, sound ecology and societal behaviors have to imagine... *Smartland* as a garden of the «post-digital» era.

Christophe Lebreton

SMARTLAND
DIVERTIMENTO

" Laughter is the most civilized music in the world "

Peter Ustinov

Immersion in laughter

Historically speaking, laughter is first perceived as radiation on the face. In ancient Greek, the most common meaning of the verb Gelan is "laugh", it seems to have originally meant "to shine" (the Indo-European root freeze-expressing the idea of "shine" to "sparkle"). For the ancient Greeks, the laughter was beautiful because it was primarily bright, because it was light.
Smartland looks like a globe of smartphones tha communicate, listen, respond and sparkle, autonomously as fireflies can do. The sound material is only laughters (from the recording of several hundred people). The installation revolves rhythms and fully play this happy, human, emo- tional or strange subject. The laughter (as a tree) are singing and behaving after an ecosystem, the laughter of nature, closely associated with the beauty of the world, in Lucretius or Catullus. They are (as a globe) easy entertainin that has taken over the art and society, in all the interconnected worlds ; or "funny atmosphere" as defined by the philosopher Elie During.

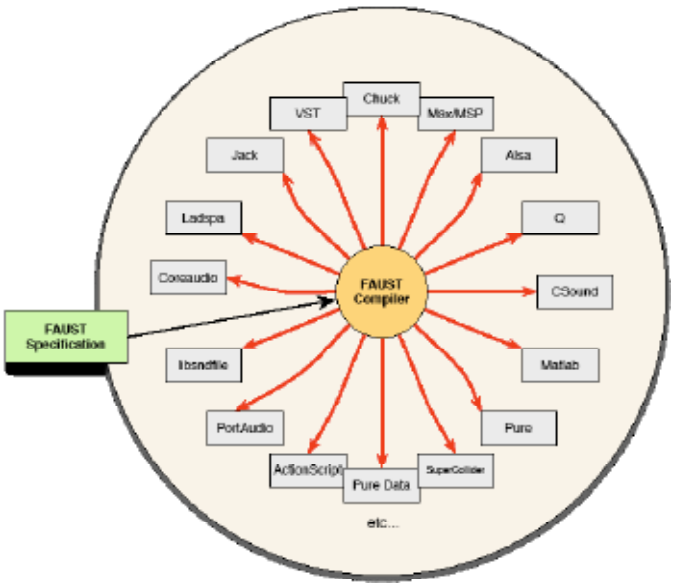
Laugh and entertainment

The creation of *Smartland* in Confluence Museum is at the heart of the idea of «entertainment», theme of the 2016 edition of the Biennale Musiques en Scène. The Entertainment has become one of the cardinal dimensions of our contemporary «condition». From online games to politics, from zapping to wellness, our immediate environment of excessive stimulation of information and impulses. Time becomes a series of emergencies in which the perception itself is fragmented, scattered, superficial.

By contrast, the «Vanity» theme of the exhibition to be held at the Confluence Museum from 2nd to 19th March 2016, covers a wide set of representations whose lines of force are the statement of wealth and earthly goods, laughter, sensuality, pleasures and games against the required stripping and acceptance of destiny. Thus *Smartland* will be presented alongside works by Ryoji Ikeda, Michel van der Aa and Kris Verdonk.

Damien Pousset
Stéphane Borrel

TECHNOLOGY IMPLEMENTATION

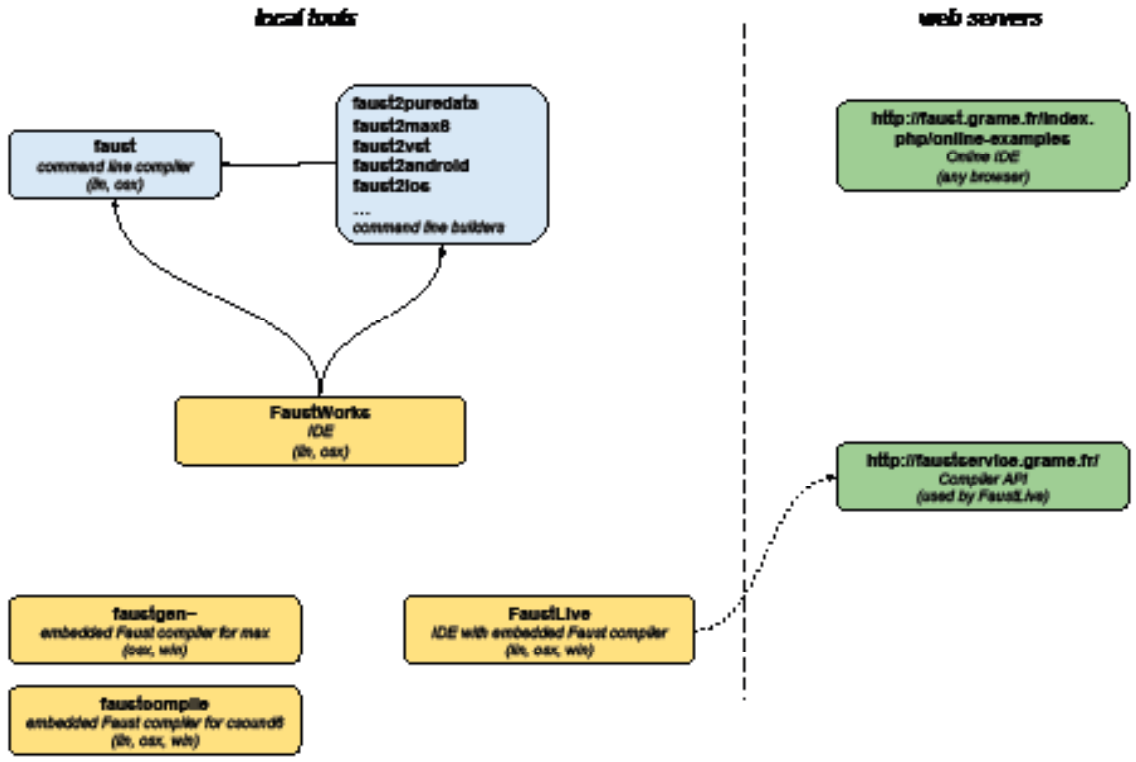


Faust development

The *Smartland* technological platform project is based on the Faust programming language and its eco-system programming tools (http://faust.grame.fr).

Faust (Functional Audio Stream) is a DSL (Domain Specific Language), a high-level programming language designed specifically for the development of digital audio applications in real time. Developed by Grame research laboratory since 2002, Faust is the subject of various national scientific collaborations, through several research projects funded by the ANR (ASTREE, INEDIT, Feever) and international (UC Berkeley, Stanford University, University of Mainz).

One of the main characteristics of Faust, compared to existing musical languages like Max, Puredata, Csound, Supercollider, etc., is to be a fully compiled language with a semantics for calculating the sample. Faust provides a high-level alternative to C for the realization of real-time audio applications. Faust can be used in all contexts where C is usually necessary. Faust compiler produces quality code, comparable in performance to the C code written by hand by a professional developer. This code is independent of any runtime, does not use any dynamic allocation of memory and provides limited CPU footprint which makes it especially suitable for embedded systems with limited resources.
Another feature of Faust is its architecture system that can adapt to the major developments contexts of use. A Faust program denotes a mathematical calculation to be performed on digital audio. How to «connect» the



calculation to the outside world is generically described by a file architecture. Dozens of architectural files are now available for the main plugin formats for OSX, Linux and Windows but also for iOS, Android and Web apps. With this approach that decouples computing use, one single Faust program can be used without modification to achieve a VST plugin, an external Max / MSP, a unit Csound generators, an Android application, etc.

As part of project *Smartland*, a new Faust architecture will be developed. It will embark Faust code in the programming environment Processing (Java). With this new architecture, graphic design Smartland application will be made with Processing and while the actual audio portion will be written in Faust. This division also facilitate the joint development of *Smartand* application between the different project partners.

Yann Orlarey

STRUCTURE
A STRUCTURE DESIGNED FOR LAUGHING SMARTPHONES

The work is conceived as a forest of smartphones on selfie rods that communicate between themselves, hearing each other and responding, lighting up autonomously like fireflies. The audio material used is recorded laughter. The installation creates rhythms by playing fully with this happy, human, touching and even strange material.

The laughter that can be heard in the trees is the equivalent of the song of the ecosystem, the laughter of Nature, closely related to the beauty of the world, as in the works of Lucretius or Catullus; it represents easy entertainment that prevails over art in all interconnected, therefore contaminated, societies; or collective mockery, ridicule etc.; or even “ambiance comedy” as defined by the philosopher Elie During. The concept is to provoke musical behaviour through electroacoustic networks and with the help of digital audio apps. The objects communicate through acoustic sound via low-speakers and microphones integrated in the smartphones. This constraint determines a musical ecosystem that reacts according to the spatial distribution of the phones and the quality of the acoustic environment. The very presence of a new body inside the installation can modify its stability and evolution.
With their personal smartphones and having downloaded the Smartland app, the members of the audience can participate and interact in harmony with this musical ecosystem. This concept offers an infinite range of possibilities, still leaving a large place for research and artistic creation on all levels: sound, visual, design, architectural, sound ecology, social behaviour... Smartland - Divertimento must be viewed as a garden of the post-digital era.

SCHEDULE

Etapes intermédiaires concernant les nouveaux développements d'œuvres participatives pour smartphones, préalables à la mise en place des plateformes pour « Smartland »

25 et 26 février 2015
Rencontres « SmartAct» / Grame et Ensba, Ecole nationale supérieure Des Beaux-Arts de Lyon
Présentation d'outils et d'environnements technologiques liés à la conception d'installations visuelles et sonores

14 et 15 mars 2015
Création de « SmartFaust onAir » / Biennale du design de Saint Etienne. Création pour smartphones et drones
Collaboration Grame-Esadse RANDOM (lab)

Printemps 2015
Création d'une œuvre participative pour enfants – Collège Thomas Riboud de Bourg en Bresse
Commande Clavichords - Production Grame avec le compositeur Xavier Garcia

Développements spécifiques pour « Smartland »

juillet 2014 à décembre 2014
Elaboration du concept, constitution des équipes, première configuration de la structure « sphère »

novembre 2014
Choix du compositeur (Stéphane Borrel) et élaboration d'une thématique musicale autour du rire

février - avril 2015
Concertation Grame/Esadse RANDOM (lab) sur les conceptions « design »
Premiers tests sur un nombre limité de smartphones (interconnection audio)

mai - juillet 2015
Développement de logiciels et écriture des plateformes entre Faust et les configurations Android et Iphone
Yann Orlarey et équipe technique Grame

juin - juillet 2015
Période de tests sur différentes configurations de smartphones, et choix définitif de la structure (sphère, ruban, cylindre...)

septembre - novembre 2015
Intégration des images et graphismes dans les plateformes Faust (choix de Processing ou Unity)

novembre – décembre 2015
Réalisation de la structure, usinage et fabrication des coques pour les smartphones

janvier - février 2016
Tests « grandeur nature » et finalisation des connexions informatiques

From 1st to 27th March 2016
Premiere of the installation at Musée des Confluences

From 31st March to 23rd April 2016
Exhibition at Lux scène nationale de Valence

APPENDIX

SMARTLAND
POST-DIGITAL ERA

The omnipresence of digital tools and technological advances support contemporary art writings in a generalized hybridization of creation. The art world is well built by processes of accumulations and complexifications between different levels, technical views, ideologies, aesthetics... unlike any scientistic ideology based on a unilateral belief in progress and technical, as advanced as it is, or any analysis based on the opposition man / machine.

Thus taking the opposite view all unicist thought, “Post-Digital“ is the integration and development of a variety of these technologies and approaches in a hybrid writing, complex and interactive process through a dialogue between arts and sciences, writing and experimentation...

The attitude “Post-Digital” could be compared to a certain conception of postmodernism which refers to the fragmentation of the individual, its contradictions and paradoxes, culture differences.

The “Post-Digital” means taking into consideration both the immediacy of live and delayed time of writing. It is also establishing, by real-time, unedited joints between experimental and conceptual approach between exploration and notation, in a permanent state of permutations material of any origin.

This generalization to real time has certainly transformed the artistic practices and establishing new relationships in writing by the intrusion of the experiment, of the live performance on the time of conception (eg consideration of the gesture of the musician, the movement of the dancer in an interaction with the visual and sound).

It is a kind of reinterpretation of the sensitive by the interconnectivity process, resizing the participatory dimension. The “ SmartFaust “ project is an example, and is also the premises. If there has always been, since the beginning of the digi- talization, a tendency to hybridization between the tangible and the virtual, the interference between the fields, it nonetheless widespread today by the possibilities of interconnectivity between the ob- jects themselves. The traditional boundary, such as that of the computer or even the tablet, is tobe rethought. It is overthrown by much more elabora- ted opportunities of new hybridization between new material objects and computing devices. These ultra- miniaturized, powerful, connected, cheap and offering many kinds of sensors may henceforth be installed everywhere. In the music field it means new opportunities, for example regarding musical instrument making, but it also means new forms of writing.

We may consider that lute making itself might therefore become a writing object. This moving to meta - level is similar to the one that leads to a specific for the work digital tools construction,

so as to become an integral part of the poetical and artistic contemporary art. Musical programming languages are the tools, par excellence, of this meta-writing. If this meta-writing has up to now been purely software, it will ultimately allow the de- velopment of an integrated process for both logical and physical parts (for example via 3D printing systems).

The abundance of communicating hybrid objects in itself, opens new writings’ perspectives. Complex systems exhibiting emergent properties through local interaction of simple but numerous agents, have always interested artists. But that it has been done up so far mainly through compu- ting simulations, inside a machine. The availability of potentially hundreds, even thousands of inter- connected computers (for example the audience’s smartphones), provides the opportunity to produce full-scale emerging phenomena, scale of a concert hall, a stadium, a crowd, etc.. It is also a huge exploration field opening wide compositional and transdisciplinary possibilities.

Post-digital would be this space of crystallization, and mixtures interference between multiple forces of moving back and forth, focusing on networking and sharing : a mobile space between the worlds of analog and sensitive, the virtual and the immaterial.

James Giroudon, directeur général
Yann Orlarey, directeur scientifique

BIOGRAPHIES

Stéphane Borrel, composer

Musical compositions for various ensembles (from chamber music to symphony orchestra, from mixed electroacoustic music to sound installation), presented at the Forum of the young musical creation ISCM in Paris, festivals in Leuven TRANSIT, Why Note in Dijon, MUSICA in Strasbourg, Extension Du domaine de la note in Paris, Patchwork in Taverny, Inventive Music in Annecy, Unerhörte Musik in Berlin, Chantiers de creation in the Auditorium of Lyon, the musical season Rondó in Milan, Rencontres contempraines in Lyon and Haute-Loire, Cabaret contemporain, the Schlagzeugwoche International Stuttgart, by ensembles such as Eole, L'Instant Donné, Ensemble Orchestral Contemporain, Ensemble ACTEM, Orchestre National de Lyon, Ictus ensemble, Les Percussions de Treffort, Ensemble Pléïade, Atelier XX-21, Trio Morpheus, Divertimento Ensemble, Alter Duft, Cairn.

Commissions from CEFEDEM of Bourgogne and Grame (2007), Ictus ensemble (2007), Academy OPUS XXI co-organized by the CNSMD Lyon, Hochschule für Musik und Theater Hamburg and Landesmusikrat Hamburg (2008), French State (2008), Treffort Percussion (2009), Orchestre National de Lyon (2001, 2010), Trio Pocket (2011), Radio-France (2012), conservatories of Lyon (2013) and Annecy (2014), GRAME (2015).

Composer in Residence in the studios of Grame (2007), Muse en circuit (2007-2008), MIA (2008), GMVL (2010-2012). Winner of a scholarship Phonurgia Nova (2009). Price Hervé Dugardin symphonic commission of the SACEM (2013).

RANDOM (lab), ESADSE

David-Olivier Lartigaud

Professor specialized in the theory and practice of new media, he is also coordinator and co-responsible with François Brument the RANDOM (lab) ESADSE. Lecturer at the Faculty of Visual Arts and the Art of Science from the University of Paris I, he has organized international conferences «art-oriented programming 1 & 2» at the Sorbonne in 2004 and 2007. He was responsible from 2003 to 2007, of the research «meaning and use of the art information programming» and is coordinating the search line «objectify», both supported by the DGCA. Recent Posts towards the ART to HYX ++ book editions, Orleans, 2011. Contribution to the book Search Terms:. Low def, under the direction of Nicolas Thély to B42 Publishing, Paris, 2012.

Johann Aussage

Professor in ESADSE, membre of RANDOM (lab), designer and graphist, co-founder of « la nouvelle fabrique», Paris (http://www.nouvellefabrique.fr/).

Damien Baïs

Professor in ESADSE, membre of RANDOM (lab), designer and graphist, co-founder of corp lab (http://www.corp-lab.com/)

Jacques-Daniel Pillon

Professor in ESADSE, membre of RANDOM (lab), engineer.

RANDOM (lab), ESADSE

François Brument

Designer in Paris, he founded the digital design studio «In-Bending» and conducts research on the potential of digital creation in the Design field.

He graduated from the ENSCI / Les Ateliers in 2004 with his project and memory, «In-Training, digital paradigm» in which he lays the foundation for his unique approach.

He articulates a continuous research practice and collaborations with businesses.

He substitutes computer programming to drawing, and develops creations oscillating between digital objects and industrial production, a constantly evolving design.

His work is exhibited in France and abroad since 2005 and is included in the collections of the National Fund for Contemporary Art, the Pompidou Centre, the SF Moma, the Cooper-Hewitt Design Museum, the Museum of Decorative Arts, the Canadian Centre Architecture, Yingge Ceramics museum and the VIA.

Christophe Lebreton, IT design and engineering

After a musician and scientific training, he joined the team of Grame in 1989. He worked for the research and development of tools, while confronting with daily realities and diversity of contemporary productions: great shows, international concerts, sound installations, discographies... Since 2003, he worked specifically on the motion capture and augmented scene. He experiences what he calls «instrumental set design» and is interested in all the arts where research and development are related.

Yann Orlarey, conception language Faust

Along with university studies in economics and computer science, Yann Orlarey followed electroacoustic music class at the Conservatoire de Saint-Étienne. Grame member since 1983, he is currently responsible for the research department of the organization.

His work focuses on formal languages for music composition and music real-time operating systems. He is author and co-author of various systems and music software.

His repertoire includes tape pieces, interactive pieces and instrumental pieces for soloists, small ensembles and orchestras. Most of his works make use of IT resources, either in terms of instrumental playing situations offered to performers, either in the actual musical composition.

Many pieces are the result of a work co-writing done under Grame as was the case with the clarinettist and composer Jerome Dorival. Many of his works have been performed in Europe, but also in the United States, Canada, China ...

PARTNERS

GRAME

Centre national de
création musicale

Production, Commission, Residency

Grame, musical innovation and convergence of art and science

Created by Pierre Alain Jaffrennou and James Giroudon in 1982, Grame is now one of the six constituent centers of the network of national centers of musical creation, labeling established by the Ministry of Culture in 1997.
The main mission of Grame is to design and implementation of new musical works, in a context of cross synergy of arts and arts - science.

Grame is a welcoming place and residence for composers, performers, researchers and artists from various disciplines engaged in the innovation process. They find a high-level technical environment, with an artistic and technological assistance. Twenty French and foreign composers, as well as various artistic teams are invited in residence during each season.

Creations and intermingling are available through various instrumental ensembles, from solo to large ensembles. New productions cover shapes falling as much as the spectacle of the concert, opera, performance or exhibition with sound and visual installations.

All these artistic activities are underpinned by an interaction arts - science where computer component is very present. Grame meets a permanent scientific team that has specialized in three research themes: real-time communication systems, the systems of representation of music and performance, and programming languages.

ESADSE

Laboratoire RANDOM (lab)
Recherches Ouvertes en Art,
Design et Nouveaux Médias

Co-production of the installation,
Design of the screens and structure

RANDOM (lab) of digital cluster ESAD Saint-Etienne is a research space dedicated to experimentation in art, design and new media

The RANDOM (lab), established in 2011, offers to draw a singular path between practice and theory.
In addition to a resource center and a workspace for the production of electronic assemblies, the RANDOM (lab) provides a «arduinothèque» consists of type Arduino platforms and extensions that can be associated. Students can have a direct and quick contact with this kind of interfaces in order to move in a very short time, from design to prototyping projects including electronics.
Building on the work initiated by 4th and 5th grade students in art, design and post-graduation and on projects conducted by the teaching staff or guest speakers, research in the RANDOM (lab) are organized around main research axes. :
- «Prototyping» which aims to analyze the increasing development of new means of digital productions «light». This research proposes to develop a reflection on the manufacturing processes, products and new items practices they generate.
- «Video games» centered on the videogame culture rather than on creating games. This is to examine the video game universe in all its aspects in order to study the forms and to invest unexplored areas.

LUX

Scène nationale de Valence

Exhibition, from 24th March to 15th April 2016

Multidisciplinary and rooted in contemporary art, the LUX project is based on the dialogue between the visual arts and performing arts. The images - film or from the new media- constitute the focal point: Plural pictures: exposed and projected, and now with the new scenic plateau, choreographed and spatial ... to become habitable spaces of an image scene.
Fruitful exchanges between images, dance and music are now enriched by technology
Digital which multiply the points of contact, promote handling and nesting materials, connections and hybridizations in an aesthetic absorption where different disciplines stimulate, energize themselves.
This is the heart of the excitement and challenges of contemporary uses asserts LUX National Scene. Thanks to its topography offering several forms of presentation - shows, exhibitions and screenings - LUX offers artists transdisciplinary course and present simultaneously dancing to the plate and installed the show in an environment inhabited by new technologies, film set , performed and staged with music and multimedia tools. LUX project is embodied in a dance show season and visual music, film and exhibitions, available in a nice season for children and youth. Forward, the project explores new modes of transmission through actions of artistic and cultural education, experimentation and training as part of the Regional Education Cluster images.

FONDS [SCAN]

Fonds de soutien à la création artistique numérique

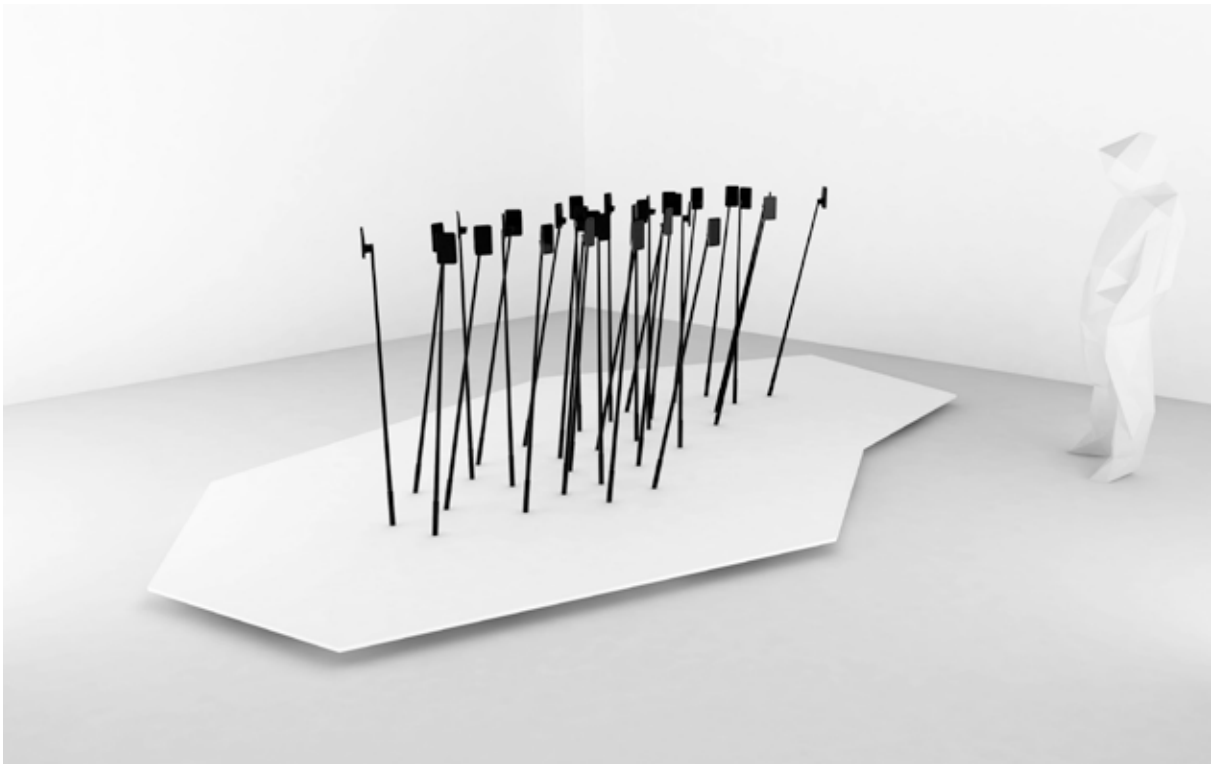
La Région Rhône Alpes a adopté en avril 2011 une nouvelle politique dans laquelle elle fixe s'engage à soutenir les arts numériques en créant notamment le Fonds de soutien à la création artistique numérique, ou fonds [SCAN].

Ce fonds a pour objectif de soutenir des créations artistiques faisant intervenir des technologies numériques.

Le fonds [SCAN] a été rejoint en 2012 par la DRAC Rhône-Alpes. La Région Rhône-Alpes et l'Etat souhaitent ainsi conjointement identifier des projets qui ne trouvent pas leur place dans les dispositifs régionaux existants. Il s'adresse donc aussi bien à des artistes ayant une pratique dans une discipline et utilisant de façon significative des techniques numériques qu'à des artistes faisant spécifiquement appel à ces dernières.

Il a vocation à soutenir les œuvres en création. Il peut s'agir aussi bien d'étapes de recherche ou d'expérimentation que de réalisation. Tous les champs de la création artistique sont concernés mais la pluridisciplinarité sera favorisée, ainsi que le recours à des compétences croisées artistes/professionnels des technologies numériques, à l'exclusion des projets pour les nouveaux médias, accompagnés par un autre dispositif.

Le fonds [SCAN] Rhône-Alpes s'inscrit, par ailleurs, en complémentarité avec le Dispositif pour la Création Artistique Multimédia et numérique (DICRéAM), piloté par le Centre national du cinéma et de l'image animée (CNC) et dont la DRAC Rhône-Alpes assure le relais en région.



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