"Adding socio-economic value to industry through the integration of artists in research and open innovation processes"

DELIVERABLE 4.2

Selection of Residencies / Fellowships - Year 1

Grant agreement no: 732112

Adding value to research and technology through integration of artists in projects and synergy creation between creative industries, entrepreneurs, researchers and arts

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Disclaimer:

Table of Contents

Executive Summary

This deliverable provides a full description of the first VERTIGO STARTS selection process for the first call for residencies published on March 14th. It specifies all the formal elements of the selection process, and explains the choices and decisions made in the process of its elaboration in relation to the other VERTIGO work packages.

The content of this deliverable gives also statistics relative to the first call for residencies. This data can help us to better understand the audience of our calls, and to better tune the next one. Finally, it gives some insights of the first Jury that can be used for a better definition of the next selection process call 2.

The whole evaluation process has been operated on the Ulysses platform of the Ulysses European Project[1]. The figures and tables shown in this document are extracted from the data of the platform. The use of Ulysses platform has been supporting the whole process from the submission of applications to the final decision. Some improvements of the platform are notified in the specification process of the next version of the platform; part of the VERTIGO WP3.

The core part of this deliverable is dedicated to a synthesis of the selection process of the first call (Section 1). The other sections detail each step of the selection process, namely: i) selection of the Jury, ii) the review step by the ICT-Projects coordinators, iii) online Jury evaluation, iv) pre-selection and, v) the final decision. The annexes contain the official results of the first call for residencies (Annex 1), the announcement of the winners (Annex 2), the non-disclosure agreement signed by all Jury members and reviewers (Annex 3) and the program note given to the Jury during the Jury meeting, containing the Jury program (Annex 4) and the Jury enclosure sheets (Annex 5) and minute (Annex 6).

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[1] http://www.ulysses-network.eu

SECTION 1 – Process of selection of the First VERTIGO STARTS Residencies Call

The process of selection of the first VERTIGO STARTS Residencies call, as part of WP4, was conducted in close interaction with tasks of other work packages, including WP1 T1.2 – Outreach to ICT projects and initiatives providing the selection of projects for the call, WP2 T2.1 – Co-creation methodology defining the principles applicable to the call, and WP3 - T3.1-Preliminary version of web platform as a support of publication of the call.

Tightly coupled to the design of the co-creation methodology, the selection process has been defined before the first call.

The objective was to announce the results of the first selection, on July 11th 2017, simultaneously as part of a specific event of the Festival d'Avignon and in the project web site.. The selection process is composed of the selection of the Jury (Step 1), the online review by the ICT-Projects coordinators (Step 2), i.e. an online review for the corresponding applications; the online Jury evaluation of all the applications (Step 3), done by the Jury online; the pre-selection (Step 4) done by the Jury during the Jury meeting; and the final decision (Step 5), done by the Jury and agreeing on the resulting selection. All the process had to converge in a short delay (1 months and half) after the closure of the first call for residency.

An intensive work was performed as part of the concerned work packages (WP4, WP3, WP2, WP1) and in close coordination between them, and enabled to converge to the online publication of the results for the official public event of July 11th.

Schedule of the first call for residency

- March 14: Call for ICT Projects

- **[Step 1] March 15-17 meeting: composition and invitation of the Jury**

- March 24: Project selection criteria on the call for project website. Producer Form on the call for project website. Jury organisation.

- March 31: Ulysses platform created

- April 6: Ulysses platform tested

- April 10: Closing of the call for ICT Projects

- April 12: 39 ICT Projects selected (by VERTIGO internal Project Selection Committee)

- April 13: Notification to the selected ICT Project coordinators of the evaluation process

- April 14: Opening of the call for Artists

- May 22: Deadline extension of the call for Artists

- May 29: Closing of the call for Artists

- **[Step 2] May 31: Opening of the review by the ICT-Projects coordinators**

  - Signing of the Non-Disclosure Agreement (NDA)by the concerned ICT Project coordinators.

  - **June 12: Closing of the review by the ICT-Projects coordinators**

- **[Step 3] June 14: Opening of the Jury online evaluation.**

  - Signing of the NDA by the Jury members.

  - **July 29: Closing of the Jury online evaluation.**

- July 3-4: Jury Face-to-Face Meeting

- **[Step 4] July 3-4: Pre-selection**

- **[Step 5] July 4: Final selection and decision**

- July 5: Confirmation of all the parties

- July 6: Distribution of residencies between partners in charge of following-up the residencies (Ircam, ArtShare, INOVA+, EPFL)

- **July 11: Public announcement of the winners.**

- July 18: First version of D4.2

Applications:

At the closure of the call for Artists, a total of 89 completed applications were received. Three candidates (Artists) submitted two applications. An ICT Project coordinator, who could be a researcher or another type of expert in the project, represents a corresponding ICT project.

Applications – ICT Projects

The number of applications per ICT Projects varied (Figure 1). For instance, the WEKIT project received 11 applications whereas the U_CODE project gathered only one application. The 89 applications submitted by Artists addressed only 25 of the 39 ICT Projects presented in the call.

filters_str	Number of applications
WEKIT	11
Flora	10
EMOBODIES	7
AMORE	6
BINCI	6
Create	5
GROW	4
hackAIR	4
MAGIC	4
Brain	3
DANCE	3
Human	3
Virtuosity	3
VisualMusic	3
WEAR	3
ARCHES	2
Bio4Comp	2
MONICA	2
Programmab	2
BiPhoProc	1
C3HARME	1
ExaFLOW	1
QuNet	1
U_CODE	1
Urban	1
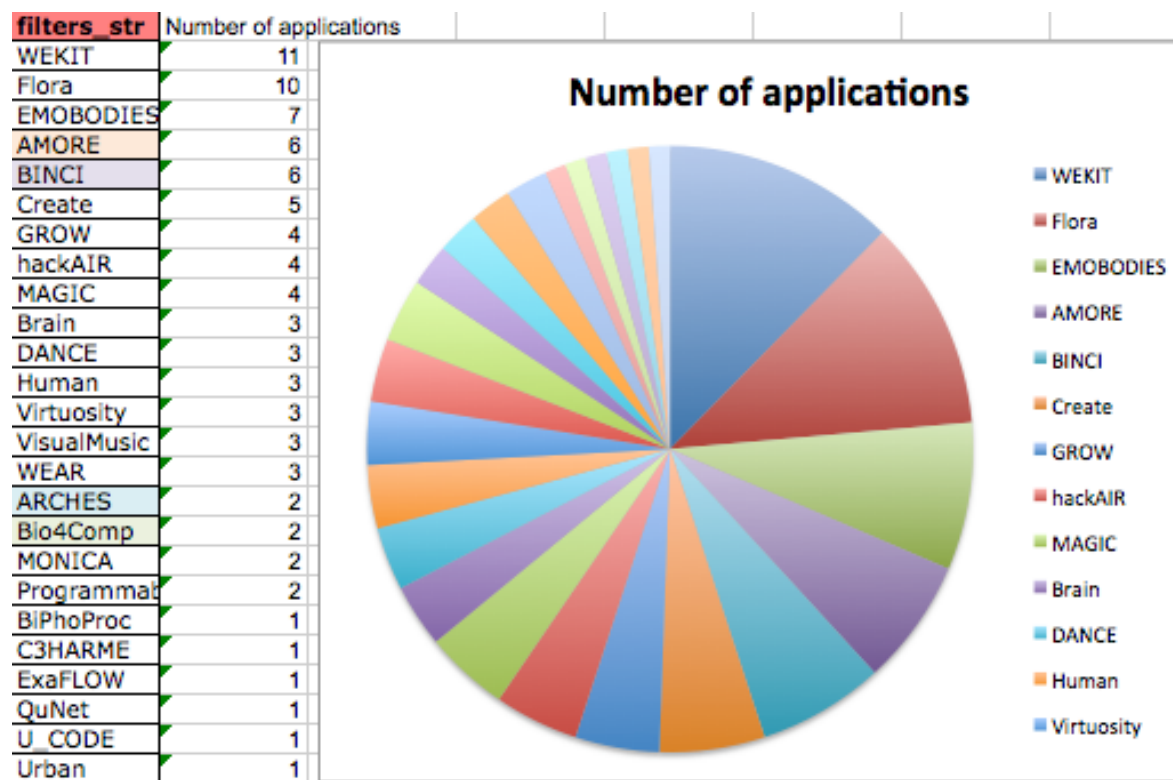
Figure 1: Number of applications per ICT Projects

Applications – Orphan ICT Projects

Following the above, a total of 19 ICT Projects remain orphans, this means that any application from Artists were addressed to these projects: BEACONING; CAR2HC; CAST; CUPIDO; IOF2020; MOEWE; MONT-BLANC3; NIR-VANA; OLA; SDP; SMART RURAL AREAS; SPARK; TELMI; weDRAW. Upon the results, the coordinators of these ICT Projects were notified and invited to participate to the 2nd call for VERTIGO STARTS residencies.

Applications - Knowing the Artists

To better understand the community of Artists interested in the VERTIGO STARTS residencies programme, the applications were analysed in terms of the gender and the nationality of the Artists applying to the call. Although, some applications were submitted by a group of Artists, for this analysis only the information concerning the lead applicant was considered.

Regarding gender (Figure 2), it can be observed a balanced interest with 50 applications being submitted by 50 men and 39 applications presented by women.

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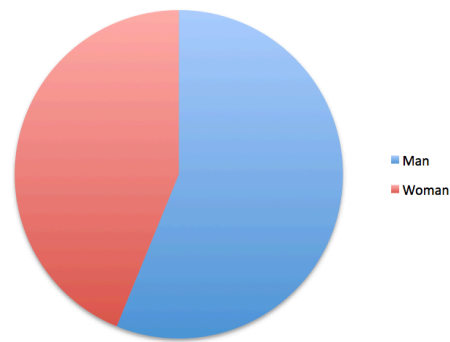
Figure 2: Gender of the appliers

Regarding the origin of Artists applying to the call, and considering their nationality, it can be observed that most are from European countries (Figure 3). Nonetheless, it is interesting to verify that the VERTIGO STARTS call raised the attention overseas, with applications being submitted by, just to name a few, American, Chinese and Japanese Artists.

citizenship	Numbers of candidate
British	14
French	10
Italian	10
American	8
Spanish	5
German	4
Belgian	4
Portuguese	3
Polish	3
Austrian	3
Chinese	3
Swiss	2
Danish	2
Indian	1
Japanese	1
Latvian	1
Brazilian	1
Finnish	1
Thai	1
Israeli	1
Ecuadorean	1
Swedish	1
Slovenian	1
Australian	1
Singaporean	1
Russian	1
Estonian	1
Colombian	1
Slovakian	1
Croatian	1
Mexican	1

Figure 3: Nationalities of the Artists applicants

SECTION 2 - Step 1: Selection of the Jury

As defined in D4.1- Residencies Chart and Contract Template:

> *The targeted process of selection for artistic residencies will follow the rules defined in the VERTIGO Grant Agreement, including remote reviews and a final selection by an high-level international Jury made of at least 12 high-level experts representative of the various required expertise fields, at least 51% of them external to the project. It has been agreed that members of ICT projects would be solicited to participate in the remote review of the residencies applications based on their project.*

In addition to these criteria, a gender-balanced Jury, coming from various places in Europe and of various expertise covering artistic, ICT related, industry and innovation fields, has been targeted.

First, all the partners of the project have suggested some Jury members. A first selection has been made according to the above criteria and the corresponding people have been contacted. After this first run of invitations, several redirections or defections occurred and other potential membe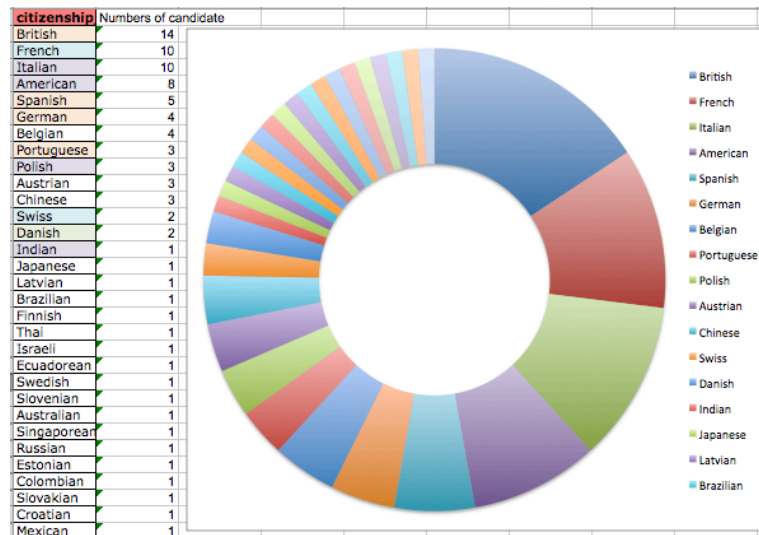rs have been contacted with respect to the final criteria. The final Jury members have been selected in time, but then a defection (Ralph Dum) occurs reducing the Jury members to 11 instead of the 12 initially targeted. This defection appeared too late in the process to fill the gap and contact another person at the very last minute– therefore, it was agreed to proceed with a Jury composed by 11 members.

The following Table 1 presents the final composition of the Jury. Each of the Jury members signed a NDA (Annex 3), before access to the applications being provided.

First name	Name	Institution	Location	Gender	Involved in VERTIGO
Greg	**Beller (chair)**	IRCAM	FR, Paris	M	1
Gerfried	**Stocker**	Ars Electronica	AU, Linz	M	0
Marleen	**Stikker**	WAAG	NL, Amsterdam	F	0
Paul	**Dujardin**	Palais des Beaux-Arts de Bruxelles	BE, Bruxelles	M	0
Irini	**Papadimitrou**	V&A Victoria and Albert Museum	UK, London	F	0
Ludger	**Brümmer**	ZKM	DE, Karlsruhe	M	0
Laurence	**Le Ny**	VP Music Infotainment Orange	FR, Paris	F	0
Maud	**Franca**	Caisse des dépôts	FR, Paris	F	0

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Francesca	**Bria**	Head of Innovation Barcelona City Council	ES, Barcelona,	F	0
Jerôme	**Vercaemer**	Cisco: Directeur Général du Conseil	FR, Paris	M	0
Benoit	**Meaujean**	R&D Manager at Mikros Image - responsable entreprise Cap Digital	FR, Paris	M	0
			Total	6M /5F	1

Table 1: Composition of the international Jury for call 1
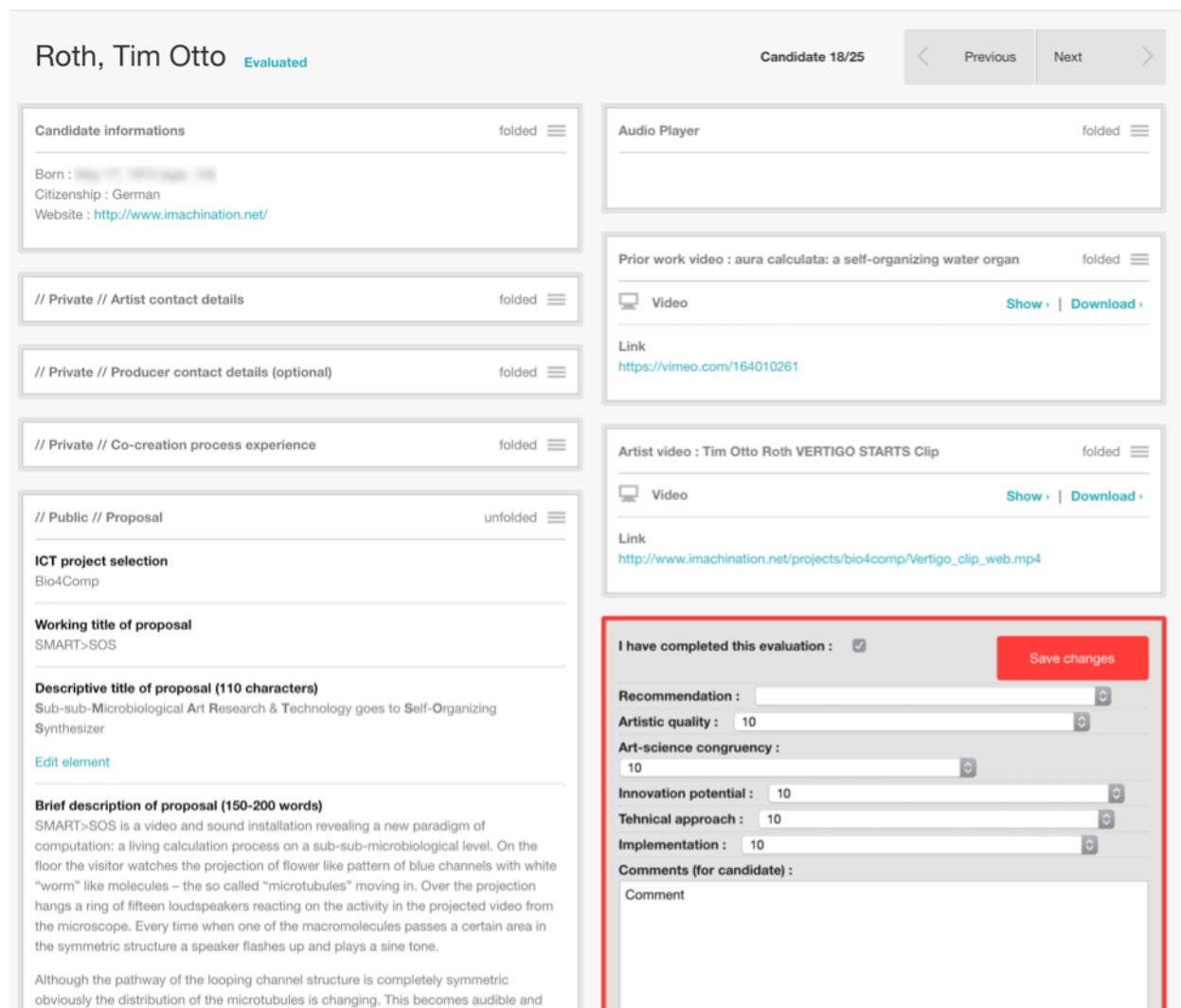

Figure 4: Group photo of the VERTIGO Jury in front of Centre Pompidou

From left to right: Greg Beller, Laurence Le Ny, Ludger Brümmer, Maud Franca, Gerfried Stocker, Marleen Stikker, , Francesca Bria, Irini Papadimitriou, Jérôme Vercaemer, Paul Dujardin, Benoît Meaujean.

SECTION 3 – Step 2 & 3: Online review process

Process

The ICT Projects' coordinators and the Jury members, both used the same Ulysses interface for evaluating the applications from artists. The retained selection criteria are exactly those defined as part of the initial specifications in D2.1 - Co-creation Methodology.

Figure 5: Interface for the Jury and for the ICT Project Coordinator online review

Results of ICT Projects reviews

The ICT Project coordinators have reviewed the respective applications, this means they have assessed the artistic applications submitted as a response to the challenge launched by their ICT Project. So, some of the coordinators had only one application to review whereas others could have up to eleven applications to review. The comments provided by the project coordinators are of

most interest for the Jury decision, as well as the scoring informs about the ranking (in terms of interest), in the case there is more than one application per ICT Project.

The scores given by the ICT Projects' coordinators to each of the applications collected to their own project, resulted in a ranking of preference (Figure 6) which was later used by the Jury in their assessment. It should be noted that the coordinators of the 25 projects which received applications from Artists, were very active and contributing as they performed all the requested reviews in a very short period of time (10 calendar days).

Figure 6: Example of the notations done by the ICT project coordinators.

A NDA has been sent and signed by the ICT Projects' coordinators prior to their access to the platform and information of the applications. For the call 2 of the VERTIGO STARTS, it is advised that the signature of these agreements is made well in advance to the beginning of the review phase so more time can be given to the ICT Projects' coordinators for this task.

Process of online Jury evaluation

After completion of the review by ICT coordinators, it has been seen that the Ulysses platform could not give access of the content of the reviews to the Jury. As this information remains indicative and not selective, the results of the initial review was presented to the Jury during the Jury meeting (Step 4). Thus, it means that the Jury made a "blind" evaluation of all the applications (Step 3), as they were not aware of the opinion of the ICT Project coordinators.

For the online evaluation to be relevant, all applications had to be assessed. Furthermore, to mix the Jury evaluations, it has been planned that 3 evaluations would be carried out per application were to be done by three different Jury members. So, all the89 applications had to be evaluated three times, giving a total of 267 evaluations. Each of the 11 Jury members received 25 applications to be assesses in a period of 10 calendar days.

The mapping of the 267 evaluations on the 11 Jury members has been made semi-randomly. For the projects where 10 or more applications have been made, every Jury had one of the corresponding application; so, every Jury member could have an overview of the most demanded ICT Projects. Then the other evaluations have been randomly mapped onto the 11 Jury members.

Figure 7: Example of the mapping of the evaluation to the Jury members

Results of online Jury evaluation

Despite the initial plan and due to time constraints (the short period of 10 calendar days available for assessment), at the end not all the expected 267 assessments were made. This means that some of the applications were assessed three times as expected, as others were not. In total, the jury performed 201 assessments which resulted in a ranking of the artistic proposals collected.

Similarly to what was made with the ICT Project coordinators, the jury members received and signed a NDA prior to their access to the platform and information of the applications. For the call 2 of the VERTIGO STARTS, it is advised that the signature of these agreements is made well in advance to the beginning of the review phase so more time can be given to the Jury members for this task.

SECTION 4 – Step 4: Pre-selection

Preamble

The face-to-face meeting of the Jury, which took place in Paris on the 3rd-4th of July, had a duration of 7 hours all devoted to the pre-selection phase (see the program of the Jury meeting in Annex 3). Having this, the time available for the discussion of each of application was in average of 14 minutes. . The number of applications to be discussed at this Jury's meeting was of a maximum of 30. Thus, a preamble of the pre-selection started by reducing the total amount of applications of 89 to 30 taking account the corresponding rankings done, on one hand by the ICT Project coordinators (Step 2) and on the other hand by the Jury (Step 3).

As mentioned before, a total of 25 ICT projects received applications from Artists. However, each project could host a maximum of one residency. The comparison of the two online rankings revealed a consensus for 20 ICT Projects, i.e. the Jury and the ICT Project coordinators agreed on the better application for the respective project. Disagreement was only seen in regards five cases of ICT Projects, where the opinion from the ICT Project coordinator and the Jury were divergent. For these 5 special cases only, two applications related to the ICT Project were discussed in the Jury meeting, the one rated the 1st by the ICT project coordinator and the one rated the first by the Jury.

Process

The Jury meeting had as main objective the drawing of 3 lists, as follows:

- A primary list made of 10 applications/residencies, with up to 3 belonging to the category 2 (maximum funding of 30k€).
- A secondary list made of 5 ranked applications, serving as reservoir in case one application of the primary list would be rejected by either the Artist or the ICT Project coordinator.
- A rejected list made of 15 applications.

The meeting followed the list of the 30 pre-selected applications organised according to the alphabetical order of the ICT Project names. This list was presented and discussed by the Jury members, allocating 14 min for each application. The assessment of each of the applications was processed as follows::

- Selection in the Jury; identification of possible conflict of interest of jury members towards any of the applications to be discussed - 1mn

- Presentation of the ICT Project by the chairman of the Jury - 1mn

    - Reading of the title, short title and abstract/expectation

- Per application:

    - Presentation of the application done by the Artist (video) – 3min (in average)

- Reading of the comments made by the ICT Project coordinators - 1 min

- Discussion and comment made by the Jury - 7 min

- Selection of the applications using Ulysses interface - 1 min

The selection of the applications used the Ulysses platform again, but with a different mode of scoring than Step 2 and Step 3. In this Step 4, all the Jury members evaluated all the 30 applications using only one choice among the following items:

- The application belongs to the primary list (1)
- The application belongs to the secondary list (15)
- The application belongs to the rejected list (30)

Each vote has been translated into a number indicated above in parenthesis.

Figure 8: Selection interface of the Jury for Step 4

Only one case of conflict of interest was registered. It referred to an application where the artist applied together with an institution to which one Jury member belonged to. At the time of the discussion of this application, the Jury member who declared the conflict of interest, left the

meeting room and did not take part of the discussion nor validate the selection in the Ulysses interface.

Results

The numbers traducing the votes of the Jury members have been summed up to compute the ranking. At the end, the ranking computed gives information to the Jury for the final decision Step 5.

SECTION 5 – Step 5: Final selection

Process

The final selection ended the Jury meeting in a general discussion about the results of the previous Step 4. During an hour and a half, in the following order, the Jury had:

- To validate the rejected list;
- To validate the primary list;
- To define the category of each project of the primarily list;
- To rank and validate the secondary list.

Results

The rejected list has been kept as it in consensus.

The primary list has been kept as it in consensus. One application included in this list was selected despite being "rejected" during the online review made by the ICT Project coordinator. Still, the Jury decided to include this application on the primary list and suggested to the ICT Project coordinator to further observe the feasibility of this residency. After the Jury meeting, the chairman contacted the ICT Project coordinator in the name of the Jury. The latter welcomed the residency very positively arguing that the word "rejected" was a bit to strong in the comment left in the review phase. Also, in one case, the Jury provided a recommendation to the artist to better adjust the artistic proposal to the expectation of the ICT project coordinator, as follows: "*The Jury believes that the proposal can contribute in a strong way to the innovation of the research ICT Project, but would like to recommend that the artist considers to focus more on the core challenges such as privacy and security in IOT environments.*".

About the categories, some of the applications demanded category 1, 2, 2 or 1. Some of them did not mention any choice.

For these latter applications not specifying a category, , the category 1 (up to 15K€) has been automatically allocated, since the category 2 (up to 30k€) has to be strongly motivated to be acquired. Then the Jury decided to allocate the category 2 to an application (which demanded 2 or 1), which the social aspects of the project required a long period of presence of the artist *in situ*.

The total number of applications of category 2 (3) reached the maximum for this first call for residency.

The secondary list was kept as it in consensus.

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List name	Last name	First name	Gender	Citizenship	ICT Project	Title	Selected category
Primary	**Deval**	Yann	Man	French	WEKIT	ATLAS	1
Primary	**Aspinall**	Kate	Woman	British	AMORE	Blueprints For An Emergent Personality	1
Primary	**Kuusk**	Kristi	Woman	Estonian	MAGIC SHOES	Magic Lining	1
Primary	**Molga**	Kasia	Woman	British	GROW	Ode from the Dirt	2
Primary	**Tan**	Ling	Woman	Singaporean	hackAIR	Pollution Explorers	2
Primary	**Lasserre**	Gregory	Man	French	Programmable Matter	Reactive matter	1
Primary	**Roth**	Tim Otto	Man	German	Bio4Comp	SMART>SOS	2
Primary	**Kanno**	So	Man	Japanese	Create IoT	The ideal showroom of IoT	1
Primary	**Castellanos**	Maria	Woman	Spanish	Flora Robotica	The plants sense	1
Primary	**Ahmed**	Haseeb	Man	American	DANCE	Wind Avatar	1
Secondary	**Dumitriu**	Anna	Woman	British	Human Brain	Towards a Neurorobotic Chimera	2 or 1
Secondary	**Stock**	Mark	Man	American	ExaFLOW	Confluence	1
Secondary	**Rangsch**	Rona	Woman	German	QuNet	QuInStAILnEtS	1
Secondary	**Pasquali**	Francesca	Woman	Italian	C3HARME	COCOON: art is a shelter	1
Secondary	**Graf**	Roland	Man	Austrian	MONICA	METAZOA MONICA (Internet of Shoes)	1

Table 2: Final results with allocated categories

SECTION 5 – Description of the Selected Residencies

5.1 Atlas

Artists: Yann Deval and Marie-Ghislaine Losseau

Producers: Fédération Wallonie-Bruxelles, Wallonie Bruxelles International, COCOF (Commission communautaire française), and city of Moleenbek

Residency category: 1

ICT Project: WEKIT (http://wekit.eu/): Artistic exploration of Smart Glasses technology and Augmented Reality applications

ICT Project challenges

With the advent of mass-produced holographic, wearable displays and projection systems, reality has indeed become a medium, enhancing human perception with additional, artificially generated sensory input to create a new experience including, but not restricted to, enhancing human vision by combining natural with digital offers. While successful examples of putting AR on smart glasses to use are plenty, it is by far not clear, what space of opportunity the new aesthetics have, nor is it clear which design principles drive satisfying user experience.

Brief description of the technology

With the advent of mass-produced holographic, wearable displays and projection systems, reality has indeed become a medium, enhancing human perception with additional, artificially generated sensory input to create a new experience including, but not restricted to, enhancing human vision by combining natural with digital offers. While successful examples of putting AR on smart glasses to use are plenty, it is by far not clear, what space of opportunity the new aesthetics have, nor is it clear which design principles drive satisfying user experience.

What the project is looking to gain from the collaboration

An artist in residence would help explore and research this new aesthetic and design and interaction principles for 'reality 2.0'. There are two opportunities: • Using AR on smart glasses as a medium of expression, creating holographic exhibits or performances. • Reflecting on the holographic experience in other media, making the experience accessible to a wider audience (than 'audiences of one' of the wearer). Moreover, exploring what makes out the essence of a holographic experience (through translation to other media) would help determine success factors and design principles.

Residency project summary

ATLAS is a work between digital arts and visual arts, under the form of an interactive and scenographic exhibition (a mix between real models and an interactive virtual world). After being

plunge in an archipelago of poetical islands, spectators are invited to build virtual cities. For that, they have a « seed launcher ». Each launch will make an house grow. The growing houses follows some urbanistic rules, they adapt to their environment: cities in the cloud, uprooted cities, cities on stilts, flying cities… Spectators creates empty cities, without inhabitants, giving a large place to imagine what happens inside these houses. These cities take on a life of their own, with or without the interactions of users, like living organisms… The names of these cities are inspired by forgotten or immersed cities: Xanadu, Canope, Kerma, Kitej… The work consists of creating huge cities, for wandering and loose yourself. To provoque a reflexion on the topics of urbanism, architecture, and their influence on our lifestyles. And giving life to inanimate things...

Artists' short bios

Yann Deval

Interactive designer, motion-designer, musical composer. After studying the history of cinema in La Sorbonne (Paris) and studying editing and audio-visual post-production in Cannes, he settled in Brussels in 2006 where he developed his activities as motion-designer and VFX artist. He works for the film industry (Mood Indigo by Michel Gondry, The Brand New Testament by Jaco Van Dormael), music-videos (Puggy, Sacha Toorop), documentaries for Arte, tv-shows for France Television)… He occasionally trains professionals and students at digital creation workshops (School Arts2 Mons, EMMD Motion Design Brussels...) Between 2012 and 2017, he co-directs the virtual reality performance IMMERSIO. This performance is a mix between live music and digital arts, and was played in diverse venues (SAT Montreal, ADAF Athens, SignalOFF Prague, Wisp Festival Leipzig, Bozar and Halles de Schaerbeek Brussels…).

Marie-Ghislaine Losseau

Scenographer, visual art designer. She studied scenography at La Cambre / Brussels and visual arts at ISPG Brussels. She develops an activity around the topics of scenography, visual installations and the organisation of workshops with kids and adults.

5.2 Blueprints for an Emergent Personality

Artist: Kate Aspinall (Theo)

Residency category: 1

ICT Project: AMORE (http://gboleda.utcompling.com/research-1/projects/amore) : AMORE investigates how humans use language to talk about the world, and enables computers to understand us

ICT Project challenges

Imagine your GPS could see. To answer the question "Do I turn there where that big tree is?", a camera is not enough; the GPS needs to connect what you say to the portion of reality that surrounds your car. AMORE builds machines that connect language to reality, and seeks an

understanding of how people do it. The main challenges are: 1) identifying which entities ("that big tree") are being talked about, both on the visual and on the linguistic camps; 2) tracking the entities as they appear again, adding new information about them as needed; 3) learning these two abilities directly from examples. We face the machine with different tasks that require using language to talk about the world, and the machine progressively learns to represent both the entities and the language that we use to refer to them.

Brief description of the technology

We use Machine Learning to enable computers to understand how we talk about the world. Programs tell computers how to carry out tasks, as if you gave a recipe to your neighbour and he baked a cake by following the instructions. Machine Learning enables computers to learn the recipe themselves by observation, as if your neighbour watched you baking a cake and then made one himself back at home. For instance, in AMORE we give the computer a collection of images depicting different entities (say, two boys and one table), and we tell it that if we ask for "the table" it should retrieve the image of the table, but if we ask for "the boy" it should complain that we didn't get our language right, because there are two boys. By crunching thousands of examples, the model is able to generalize to situations it has never encountered. We will give the artist access to the data we learn from, to the computational model itself (definition and software), to the answers the model gives for new data, and to our analyses of the model's behaviour. We are ready to discuss any aspect of the research.

What the project is looking to gain from the collaboration

AMORE examines how language relates to the world. Art often asks the same question, either about language itself or about other modes of human expression ("Ceci n'est pas une pipe"), including pictoric representation and sculpture. The project would benefit from an interaction with an artist interested in this topic. We expect the collaboration with the artist to enrich our perspective on the following points, by viewing them through the artistic lens: The computational model itself (how it works, how we build it), the tasks that we are facing it with (task definitions, data), our results, and the overall topic of the project (reference, or how language relates to the world). We also expect the collaboration to greatly expand the dissemination of our research to society, reaching out to the wider public in a way we could not do ourselves.

Residency project summary

Blueprints for an Emergent Personality responds to the process of the AMORE project: I am interested in the ways to conceive personality as an inevitable by-product of the linguistic learning process – how personality emerges from actions. My project asks: (1) What could be learnt if one treated a computational system that can learn its own representations from data as we would a developing infant mind? (2) How can we represent non-human personality and how can this representation best combine objective analysis with subjective interpretation? I approach the AMORE computational system as an infant consciousness developing its cognitive abilities – inferring the body (or the embodiment), which emerges from the way the model-as-a-mind displays idiosyncrasies akin to a personality. I will translate the responses of the system into data points and

emotive sketches suggested by these slippages. I will then present this data to child psychology and development specialists in order to build a picture of the personality behind them. I will then construct images of a mature and embodied self from that of this early stage of its personality – essentially constructing images of non-human selves in a presentation-quality series of large graphite and acrylic figure/machine studies.

Artist's short bio

Artist, writer and academic, I practice art in the headspace and name of Theo. My practice revolves around large works on paper playing with drawn fragility and bodily alteration. My formal education has been in art history, including a fully funded PhD in the history and philosophy of drawing. I have exhibited since 2005 in Scotland, Colorado, and London, including as the most junior fellow in the history of the Rocky Mountain Women's Institute, a member of the Pirate Art Collective and recently received a grant from the Royal Drawing School in London.

http://theorhyn.com

5.3 Magic Lining

Artist: Kristi Kuusk

Residency category: 1

ICT Project: Magic Shoes (http://magicshoes.es/) : Can body-tracking, sound-based wearables alter negative self-perception and reduce physical inactivity?

ICT Project challenges

The overall aim of MAGICSHOES project is to test the feasibility and potential value of using wearable technology integrating sensory-feedback and body-tracking for improving body-representation, motor behaviour and emotion, and ultimately exercise adherence, in those physically inactive or with sedentary lifestyles. At the intersection between neuroscience research on mental body-representation (MBR), human-computer interaction (HCI) and real-life applications, MAGICSHOES will (1) develop a new wearable device that alters people's perception of their body size and capabilities as they walk or do other physical activity, resulting in more active motor patterns and positive emotional states. Further, this technology would allow (2) exploring its potential benefits for people that are physically inactive, by addressing emotional and psychological factors related to MBR. MAGICSHOES could be used for self-management and therapy for this population.

Brief description of the technology

The artist will have access to all the documentation explaining the project, and to the related bibliography, and will be in close contact with the project team that will provide support and guidance when the artist is elaborating his/her technical approach. The artist will have access to software and hardware for recording, processing and storing audio and other digital data, as well as

for capturing motion and emotion related signals from users and delivering audio. these include microphones, amplifiers, equalizers, a bracelet to track emotion related physiological signals from users and movement sensors that connect to computer or smartphones. The artist will be able to use a dedicated computer to process sound in real-time, which uses the software MAX/MSP, as well as a dedicated smartphone. Access to lab consumables for designing the motion/emotion capture system will be also ensured.

What the project is looking to gain from the collaboration

In MAGICSHOES we are exploring how sound can alter the experience of one's own body. This experience is tightly linked to self-identity, self-esteem, self-efficacy, emoacoustics, and to the way of interacting with the environment. We are rethinking how the experience of one's body could be redesigned through the use of sensing technology and sound feedback in order to augment human interaction with the environment and to enhance well-being. Artistic considerations may be decisive in shedding light on new concepts and methods for inducing sensory and emotional experiences that can increase body awareness and/or alter the perception of one's body. We are also interested in innovative wearable solutions for tracking body signals (movement, physiology) or delivering sound while people are on the move. Through the artist's exploratory work we may gain an understanding on the social acceptability of the new concepts presented and on how technology can address real issues.

Residency project summary

The project focuses on the possibilities for altering people's self-perception through the garment's inside. Fashion is famous for its ability to alter people's self perception through the looks: supportive garments adjusting the body physically (corset, tights, heels), form elements creating illusions (shoulderpads, 18th century costumes), uniforms or sub-culture looks creating the sense of belonging or exclusion. The current project looks into possible ways of altering self-perception from inside of the garment. Is there a way to change one's self-perception without relying on the feedback and the need for approval from other people?

Magic Lining builds on the insights from MAGICSHOES project and proposes a garment that allows the wearer's the feel as if their body would be made of a different material. What happens in the transition moment, when the wearer shifts from his/her own body to the marble on, or the other way around? In the intersection of neuroscience research on mental body-representation (MBR), human-computer interaction (HCI) and real-life smart textile applications, the project ask questions about the meaning of clothing.

Artist's short bio

Kristi Kuusk graduated IT BSc at the Tallinn University of Technology in 2005. She worked as an analyst, while at the same time pursuing creative studies. She acquired an MA in Fashion Design at the Estonian Academy of Arts (EAA) in 2011. In 2016 Kristi presented her PhD project on craft and sustainability qualities in smart textile services at the Eindhoven University of Technology. Her collaborative design work is presented in various international exhibitions, shows and conferences.

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Since 2016 She works as an Associated Professor (0,5) in textile futures at EAA, and practices smart textile design in her studio.

http://kristikuusk.com

5.4 Ode from the Dirt

Artist: Kasia Molga

Producer: FutureEverything

Residency category: 2

ICT Project: GROW (http://growobservatory.org) : Empower growers with collaborative knowledge to sustain soils and groundtruth European Space Agency satellites

ICT Project challenges

Democratisation of sensors and sensing, encouraging citizen participation in science. Developing a low cost sensor network for citizen science at scale. Create an in-situ dataset of soil characteristics unprecedented in scale and density. Validating detection of soil moisture by the European Space Agency's Sentinel-1 programme. Demonstrating the value to science of high volume and density citizen contributed data. Citizens empowered to cultivate land and access affordable and high-quality food. Improve the ability of European society to manage climate variability and improve our resilience to climate change. Enable the UN and Global Soil Partnership to better achieve sustainable soil management in the European region. Enable, promote and evidence sustainable micro-farming, diversification and self-sufficiency. Making the data meaningful to non-specialists. Devising novel forms of engagement in the science, data and activities. Generating sustainable engagement for communities across Europe. Facilitate rigorous citizen science. Data quality, assurance and validation. Service innovation. Policy impact.

Brief description of the technology

The GROW project holds the entire global stock of the Parrot 'Flower Power' sensor, a high powered consumer soil sensor distributed through the project. Data from these are published on the GROW API. • GROW holds a database of soil moisture and other environmental, land and social data from across Europe. The data includes time series information locked with geographical grid data giving the artist access to a rich and constantly updated source of information. The huge amount of data in the GROW database make understanding patterns and trends challenging for scientists and the public alike. Data from the platform is available through an API giving artists a simple way to integrate data in their projects. • GROW is part of a GEO community activity linked to Global Earth Observation System of Systems (GEOSS) enabling the artist to combine data from the GROW API with GEOSS, Sentinel-1 and other satellite publically available data. • The GROW Collaboration Hub is a social platform to build communities of citizens, scientists and policy makers through storytelling, immersive experience and citizen science. • The Thingful search engine

for the Internet of Things is closely aligned to GROW and gives access to any publicly open sensor or IoT entity.

What the project is looking to gain from the collaboration

The project is looking for a collaborative relationship with an artist who can bring artistic curiosity and enquiry around project themes, science, technology and data, and translate concepts and data into experiences or tangible form. How the project can benefit: • Offer imaginative ways to engage the public in envisioning the future of soils, growing, satellites, sensing and citizen science. • Illuminate how Citizens' Observatories can become a central, creative and deeply meaningful part of everyday living. • Help to question and explore the meaning and relevance of scientific information. • Contribute to devising novel forms of engagement and participation in the science, data and activities, and to community building and sustainability. • Bridge and translate between the concerns and language of scientists, citizens and policymakers. We are looking for a creator who, through their work, is opening up new dimensions and forging new visions of the role of technology in the future of society.

Residency project summary

"ODE from the DIRT" is a selection of audio/visual devices/sculptures created by Kasia Molga in collaboration with sound artist Robin Rimbaud Scanner. The data that comes from the soil and from the satellites will inform the artwork.. Various parameters such as moisture, ph, presence of specific organisms or minerals are main actors in this piece, translated and interpreted by machine learning algorithms making decision about animation of the lights and composition of the soundscape. The visual part will be made out of light components (such as lasers, LED lights or OLED screens) and will directly interact with the sound while responding to incoming data. The soundscape will be composed with precomposed audio elements - each element will be assigned to specific data parameter.

"ODE from the DIRT" can be exhibited as one device - creating a "solo" performance, or a number of sculptures - creating an "orchestra" or a "rave party". Ideally it will be displayed in urban environments to create a show about lands under the buildings and roads or nearby farms. But it also can be a beacon of singing soil in any environment wherever the soil is present.

Artist's short bio

Kasia Molga is a Design Fusionist, Artist and Creative Technologist, working on the intersection of art / science / engineering using imagination as unifying vehicle. She examines our - human - perception of "nature" in the constantly growing and increasingly technologically mediated urban environments and creates tangible, multisensory and visual experiences, immersive environments, installations and hybrid visual/physical interfaces, design fictions or speculative futures narratives. She is a co-founder of design lab Electronudes (electronudes.eu) and art collective WorldWilderLab (worldwilderlab.net). She lectures, publish and present regularly and holds MA in Interdisciplinary Design Studies (Central Saint Martin College of Arts and Design).

http://www.kasiamolga.net

5.5 Pollution Explorers

Artist: Ling Tan

Producer: FutureEverything

Residency category: 2

ICT Project: hackAIR (http://www.hackair.eu): Collective awareness platform for outdoor air pollution

ICT **Project challenges**

The overall objective of hackAIR is to develop and pilot test an open platform that will enable communities of citizens to easily set up air quality monitoring networks and engage their members in measuring and publishing outdoor air pollution levels, leveraging the power of online social networks, mobile and open hardware technologies, and engagement strategies.

Brief description of the technology

hackAIR enables the collection of data from publicly available sources: a) measurements by existing air quality stations and open data, b) geo-tagged and time-stamped images posted through social media; and contributions from the hackAIR community: c) images captured by the users of the hackAIR mobile app, d) measurements submitted by citizens using low-cost open hardware devices. hackAIR establishes models for estimating the air quality through visibility of available images. All these data are aggregated and are freely provided to the users though the hackAIR web and mobile platform. hackAIR will provide instructions (and code) to users so that they build an Arduino sensor compatible with the hackAIR platform. In addition to Arduino, we are also supporting a PSoC sensor, where sensor data can be uploaded to hackAIR using a Bluetooth low energy module.

What the project is looking to gain from the collaboration

The artist could give us a totally new perspective on the design of the hackAIR sensors and of their cases. As our project addresses citizens, and especially young people, the hardware should be visually appealing. Added to this, the hackAIR platform should be user friendly and easy-to-use, so that we involve as many active users as possible. The hackAIR platform is under development and it is going to include various gamification elements to keep users engaged. An artist could help us to make our platform even more attractive and, for sure, could contribute to the dissemination activities of the project

Residency project summary

Pollution Explorers is a participatory project co-created with the hackAIR community, that make use of hackAIR platform to help citizens make sense of the complex issues around air pollution. Made up of a series of kit-of-parts experimental wearable devices that incorporate hackAIR sensors and body gesture technology, it enable users to contribute data to the hackAIR community through measuring situated air quality while being mobile in the city and at the same time, record their

subjective perception of the quality of air in their environment, creating a layer of "perceptual air quality data" that could help further the air quality conversation. Through discovering and cataloguing the widely varying qualities of air and how people react to them, Pollution Explorers aims to investigate personal agency and responsibility in air quality issues among citizens. Pollution Explorers builds on a previous project that i developed at Umbrellium called WearAQ, and introduces further wearable participatory tools co-created with the hackAIR community. In WearAQ, I worked with primary school students in Tower Hamlets London to go out into the surrounding neighbourhood, measure air quality both technologically and through their own perceptions, and recorded their subjective experience using low tech wearable devices that catalogued their gestures.

Artist's short bio

Ling Tan is a designer, maker and coder trained as an architect and based in London, UK. She is interested in how people interact with the built environment and wearable technology, she also enjoy building physical machines and prototypes to explore different modes of interaction between people and their surrounding spaces. Her work falls somewhere within the genre of wearable technology, Internet of Things(IoT) and citizen participation. She is currently working at Umbrellium in London to understand social wearables through community participation. As an individual artist, she is supported by FAULT LINES programme as part of FutureEverything, UK.

http://lingql.com/

5.6 Reactive matter

Artists: Gregory Lasserre and Anais met den Ancxt

Residency category: 1

ICT Project: Programmable Matter (http://projects.femto-st.fr/programmable-matter/): Build mm-scale robots that can stick together. Controlled by a program, this matter can change its shape

ICT Project challenges

In this project, we will investigate a new smart system made from a hardware component and a software approach that will enable the creation of the basic blocks of programmable matter, a matter made from centimeter-size modules attached together and able to move. The hardware component is a quasi-spherical robot using computationally controlled forces for power distribution, communication, adhesion (latching), and locomotion. The software approach aims to provide a new way of programming such a complex system through a scalable, real-time, efficient, expressive and at the same time safe programming of an ensemble of robots with an emphasis on self-configuration and self-reconfiguration distributed algorithms. The application will use the robots to sculpt a shape-memory polymer sheet.

Brief description of the technology

As the design of the micro-robots composing programmable matter are not available yet, we have 3D printed bigger size elements, sticking with magnets. The artist will have at this disposition, these "fake" elements that are specific geometrical objects that we called quasi-sphere. They could be used waiting for the real hardware that will be built using polymer.

What the project is looking to gain from the collaboration

We have two kinds of ideas concerning the collaboration. First, while we are focusing on the technical design and usage of the programmable matter, we did not envisioned all the usages that can be done with this electronic clay. We expect the artist to think about applications in the artistic field. Second, we would like the artist to think of the link between virtual and real objects as thanks to programmable matter, an object being design inside a computer can be directly synchronized with a real object made from programmable matter. If the real object is modified, the virtual object will therefore be adapted. As programmable matter is matter sculpted interactively by a program and a human, we think a plastic artist would be the best match.

Residency project summary

As media artists, we explores capacities of technologies in order to draw sensitive relationships through specific stagings where senses are augmented. Most of our artworks are interactive with the touch, in order to play with sensitive degrees of proximity and intimacy. We would like to think and work with the scientist of the possibilities to use the technology of the programmable matter in order to design news artworks and new ways of interaction with the public. The concept of electronic clay could cross our artistic approach. In most of our artworks, we explore the symbolic surface of the skin, it porosity and it various interactions with the environment where the technology is more and more present. In our work, we suggest links between natural elements and objects with virtual sounds, lights or images.

What kind of poetic and symbolic relationship the electronic clay can create ?
How it is possible to build, to sculpt an intuitive and evolutive musical score and visual reation with blocks ?
How is it possible to link several objects together ? To create a singular network ? To gather several spectators in a performance ?

Artists' short bios

The couple artists Gregory Lasserre and Anais met den Ancxt work under the name Scenocosme. These artists overturn various technologies in order to create contemporary artworks. Their works came from possible hybridizations between the technology and living world (plants, stones, water, wood, humans.,..) which meeting points incite them to invent sensitive and poetic languages. Their artworks are exhibited in numerous museums, contemporary art centres and digital art festivals in the world.

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They have exhibited their interactive installation artworks at ZKM Karlsruhe Centre for Art and Media (Germany), at Daejeon Museum of Art (Korea), at Museum Art Gallery of Nova Scotia (Canada) etc

http://www.scenocosme.com/

5.7 SMART>SOS

Artist: Tim Otto Roth

Residency category: 2

ICT Project: Bio4Comp (http://bio4comp.eu): Research on computers based on biomolecular machines looks for creative solutions

ICT Project challenges

The idea of the project is that biomolecular machines, each only a few billionth of a meter (nanometers) in size, can solve problems by moving through a nanofabricated network of channels designed to represent a mathematical algorithm; an approach we termed "network-based biocomputation". Whenever the biomolecules reach a junction in the network, they either add a number to the sum they are calculating or leave it out. That way, each biomolecule acts as a tiny computer with processor and memory. While an individual biomolecule is much slower than a current computer, they are self-assembling so that they can be used in large numbers, quickly adding up their computing power. Specific challenges are (1) to design error-free junctions, (2) to multiply the number of biomolecules to adapt to the difficulty of the problem, (3) to tag the biomolecules to know which path they have taken through the network.

Brief description of the technology

The artist is invited to discuss with the researchers in the project and follow experiments in state-of-the-art nanotechnology laboratories. In order to maximize the interaction of the artist and the project, we propose to start the collaboration during a workshop 12/13 September 2017. This will give a good overview of the research field. After that, the artist is invited to spend a week in each of three partner's laboratories: 1 week at TU Dresden, Germany where the focus is on fluorescence microscopy of biomolecular motors in nanostructures, 1 week at Fraunhofer ENAS (Chemnitz, Germany) where the focus is on nanofabrication of biocomputation chips, 1 week at Lund University and Linnaeus University (Lund and Kalmar, Sweden); where the focus is the design, nanofabrication and testing of biocomputation chips. The hosting project partners will provide office space, time for the artist to interact with the wider research environment at the respective site and demonstrate live experiments. The artist will have the opportunity to get hands-on experience with observing biomolecular machines moving in various different nanostructures, (including imaging of multicolor fluorescence movies) and various techniques of nanofabrication.

What the project is looking to gain from the collaboration

The objective for the collaboration will be to get an outside perspective on our research. We hope to trigger new ideas for our research as well as learn new ways to communicate our research. This will help us to achieve a main goal of our project which is to attract and structure a larger interdisciplinary scientific and economic community to the field of network-based biocomputation. Since most of our research can only be visualized and experienced through some form of microscopy, an artist working with images will likely get the most out of the collaboration. Also, a mechanical/sculpture representation of biomolecules moving through artificial structures is possible. A background in design, and experience with mathematics/computer science or biology would be helpful but is not a requirement.

Residency project summary

SMART>SOS is a video and sound installation revealing a new paradigm of computation: a living calculation process on a sub-sub-microbiological level. On the floor the visitor watches the projection of flower like pattern of blue channels with white "worm" like molecules – the so called "microtubules" moving in. Over the projection hangs a ring of fifteen loudspeakers reacting on the activity in the projected video from the microscope. Every time when one of the macromolecules passes a certain area in the symmetric structure a speaker flashes up and plays a sine tone.

Although the pathway of the looping channel structure is completely symmetric obviously the distribution of the microtubules is changing. This becomes audible and visible by the pitch and colour of the loudspeaker – a rising pitch signals a higher activity of the correspondent area, a lower pitch indicates that fewer molecules have passed less frequently in the last time steps. This results in a sound carpet of continuously changing sine tones representing a process of biological calculus and self-organization.

Artist's short bio

Born 1974 in Oppenau/Black Forest, is a conceptual artist and composer known for his large installations in public space–often realized in collaboration with leading scientific institutions around the world. The question about space is the golden thread running through his oeuvre, which is expressed by the projective translation of objects into shadows by the medium of light, his fascination with the nocturnal firmament, or the creation of sound environments using space as a synthesizer. Most of Roth's works can be considered as a plea for a "physics of art", as they demonstrate the physical dimension of phenomena that also affects the body.

http://www.imachination.net/

5.8 The ideal showroom of IoT

Artist: So Kanno

Residency category: 1

ICT Project: Create-IoT (http://cordis.europa.eu/project/rcn/206371_en.html) : CRoss fErtilisation through AlignmenT, synchronisation and Exchanges for IoT

ICT Project challenges

The promise of the Internet of Things is that computing will disappear into the world around us. Any object, from a cup to street furniture, may be a connected object. This poses profound challenges, as its capability or use may not be transparent. This lack of transparency is compounded by a highly complex landscape of actors, where it is hard to determine who is responsible for devices, algorithms and data, and so who is accountable for privacy and when things go wrong. Profound issues are raised in the Internet of Things that are challenging to understand and address for industry partners and the public alike. Even among domain experts, a specialist in privacy may not understand the latest advances in security. This gap in understanding can inhibit acceptance and uptake of best practices among citizens and technology companies alike. The purpose of this artist residency is to make these issues tangible, visual, accessible, comprehensible.

Brief description of the technology

This residency presents an opportunity to collaborate with the leading thinkers and technologists in Europe at an early stage in the programme to develop an artistic work challenging the fundamental issues of interest in the Internet of Things. CREATE IoT will provide access to the artist to key people, companies, concepts and technologies associated with Trust in the Internet of Things. Key elements regarding the development of a trusted environment for the development of IoT and comprehensive technical and non-technical solutions regarding privacy, security and trust issues will be made available to the artist.

What the project is looking to gain from the collaboration

The project is looking for a collaborative relationship with an artist who can bring artistic curiosity and enquiry around project themes, science, technology and data, and translate concepts and data into experiences or tangible form. Unlike some other residencies, this is not envisioned to involve a high degree of hands-on access to mature technologies. Instead, the focus will be on enquiry into the issues raised and conceptual development to underpin the creation of a new artistic work. One outcome of the residency could be a video (an original work, or documentation of a work) to communicate in an imaginative, compelling and accessible way these concepts and themes.

Residency project summary

Evolution of technology is way too fast. Computers are becoming invisible and possible to embed in most of everyday object without visual awareness. Sometimes it's even difficult to point difference between IoT product and spy system. And combination of IoT, artificial intelligence, 3D technology and virtual reality realizes a lot of things. But it's not only bringing useful features to you, some of them are fearful. And it will change perception and perspective of things. "The ideal showroom of IoT" is a two-part composition, a participatory installation with a capacity of one person. The room is made with state-of-the-art technology. And the system try to capture

information from participant as much as possible. It is ideal for technical perspective, and also companies which want to use personal data for sales. Though, Is it ideal for every single person as well? There's a lot of pros and cons, and being discussed. With this installation, participant will experience both of observed and observing side. this experience can make another perspective.

Artist's short bio

Graduated Musashino Art University department design Informatics Finished Institute of Advanced Media Art and Science. Part time lecturer at Tokyo Zokei University Media DesignPart time lecturer at Tokyo Polytechnic University department of Interactive media. So Kanno is using technology and focusing on some specific matters of technology such as relation between signal and noise, error and glitch. Making things to have new perspective. He is known for his drawing machine represented by graffiti robot, exhibited drawing machines at SeMA Biennale Mediacity Seoul 2012, the Sapporo International Art Festival 2014 and elsewhere.

http://kanno.so

5.9 The plants sense

Artists: Maria Castellanos and Alberto Valverde

Residency category: 1

ICT Project: Flora Robotica (http://www.florarobotica.eu): Symbiotic relationship of robots&natural plants, explore plant-robot societies, produce architectural artifact

ICT Project challenges

We face multiple challenges in robotics, biology, and architecture. To control the growth of natural plants, we have to create the right light conditions that balance the plant's needs to stay healthy and allow our robotic nodes to use their LEDs to steer the plant growth. Our robots need to sense the presence and the growth of plants, which is a challenge for sensor development. Our experiments are combined robot and plant experiments, which means we have to comply with two different experiment protocols at the same time. For architecture it is a challenge to accept the building process as a continuous process over long periods of time where we do not distinguish between a design and construction phase.

Brief description of the technology

We develop braiding robots, robotic nodes, and intelligent filaments. Braided structures are a key element in the project; they serve as scaffolds for natural plants. The braiding robots are small and modular robots that are able to automatically braid sophisticated structures, such as tree-like scaffolds. They are controlled by bio-inspired algorithms that determine where to branch and grow. The robotic nodes are small and static robots that interact with plants by light and sensors. They are able to attract and repel plants to grow desired shapes. The intelligent filaments are equipped with

actuators and sensors and can be woven into the braids to create a distributed sensor array and distributed computer.

What the project is looking to gain from the collaboration

We are very open for new ideas and hope for an artistic transfer in the context of exploiting plants to grow desired shapes and forms, using different light spectra to influence plants, and exploring the many possibilities of braiding combined with intelligent filaments. The artist's work could reflect on general concepts, such as bio-hybrid systems, green infrastructure, or green cities. Our methods can also be applied to urban and vertical gardening, which opens up options to discuss the role of a modern citizen living in an ever growing city. Our flora robotica system is supposed to interact with human beings; hence, one could explore the possibilities of human-plant-robot interactions.

Residency project summary

Plants are living organisms present across the planet. However we don't hear them, we can't communicate with them, and we haven't the capability to understand them. But the science and the technology bring us the tools to make this communication possible. «/The Plants Sense\" is a project focused human-plant-robot interactions. We propose to develop a plant-human interface, able to feel the plants senses in humans. We propose to build a wearable device that allow us to connect ourselves with plants, and allow us to forge new bonds human-plants. A new way to feel plants, througt our skin, a much more intimate an emotional way. We have a background working with plants. In previous projects we developed sensors able to measure electrical vibrations in plants. So, we realised that this electrical vibrations changes depended on the changes in the surrounding, and we develop devices to visualize this changes in plants. But what will happen if we can feel this changes in our own skin? What will happen if we can feel the plants with our whole body? Maybe our perception of the plants will change.

Artists' short bios

María Castellanos has a degree and a PhD in Fine Arts from the University of Vigo, Spain.

Alberto Valverde is an artist and a technologist with a background in mathematics, with a solid experience in system design, interactive environments, robotics and programming.

They started to work together in 2009 under the name of uh513. Since then, they have been working in a variety of projects, focus in the relationships between humans and machines and creating technological interfaces to enhance human capabilities using technology.

http://www.uh513.com

5.10 Wind Avatar

Artist: Haseeb Ahmed

Residency category: 1

ICT Project: DANCE (http://dance.dibris.unige.it/): Create and enable artistic experience of seeing dance and hearing music through tactile sensation

ICT Project challenges

Create and enable the artistic experience of seeing dance and hearing music in normally seeing and in congenitally blind people through tactile sensation. Based on data from motion capture we have previously created 3D printed body objects that were explored through touch. The project will focus on dance movement of the whole body and its sonification to be rendered in material objects.

Brief description of the technology

The host institute offers an excellent research infrastructure to carry out the project. The facilities for psychophysical testing (EMG and EEG) are outstanding and Maastricht University is a world-class brain imaging center, which gives privileged access for our fMRI studies and multimodal imaging. In addition to behavioral experiments, the main tools are a) comparative patient studies, neuropsychological test batteries and structured assessment of emotion and social cognition; b) Physiological measures; c) MRI Methods (Structural MR, Functional MRI, Retinotopic mapping of visual areas, structural (DTI) and functional connectivity analysis (Granger causality); d) MEG and EEG Recordings e) IVR (immersive virtual reality tools) combined with EEG or TMS; f) a wide selection of patients and social-culturally diverse groups

What the project is looking to gain from the collaboration

An artist interested in visualizing the artistic expression of dance movements through 3D printing

Residency project summary

Our minds are limited to the corporeal form of our bodies which have distinct capabilities and limitation. Working with the Brain and Emotion Lab, the project "Wind Avatar" directly links a person to the wind. Body movements express emotion in subtle and highly coded ways. The practices of dance stabilize the expression of emotion into patterns of movement. The Wind Avatar creates a direct relationship between these patterns of expressive body movement in dance and turbulence patterns in the wind and allow a person to literally inhabit the wind and its freedom.

This project brings together three years of existing research in fluid dynamics by the artist with Dance's systems to create an original fusing of disciplinary knowledge. A wind tunnel system developed by the artist with engineers from the von Karman Institute for fluid dynamics creates the face of the wind and allows for the control of its expressions.

Like the Dance project, the Wind Avatar is particularly interested in working with people who are physically impaired or congenitally blind. This project can offer a tactile sensory experience of visual phenomenon by employing the full-body sensation of wind blowing on a person's skin.

Artist's short bio

HASEEB AHMED (b.1985) is a research-based artist. Originally from the US, he now lives and works in Brussels. He produces objects and site-specific installations.

Often working collaboratively Haseeb integrates methodologies from the hard sciences into his art production. Currently he works with the von Karman Institute for Fluid Dynamics in Brussels to create the Wind Egg Trilogy. The project blends art and aeronautics, myth and technology, to create new narratives for the present. Its final part will be shown as a solo exhibition at the Museum of Contemporary Art in Antwerp in 2018.

http://www.HaseebAhmed.com

SECTION 6 – Post-selection process

Distribution of the residencies

It was foreseen that 4 partners of the VERTIGO consortium would be mandated to follow the selected residencies: IRCAM, Artshare, Inova+ and EPFL, with co-production contracts managed by the first 3 partners. Right after the final selection, winners (both artists and ICT Project coordinators) have been contacted and all confirmed their interests to pursue the co-creation processes. The day after (5th of July 2017), a consortium meeting established the distribution of the residencies management among partners, as follows:

Residency	Partner Contracting the Residency	Partner Monitoring and Supporting the Residency
ATLAS	ArtShare	EPFL
Blueprints	INOVA+	INOVA+
Magic Lining	INOVA+	INOVA+
Ode from the Dirt	IRCAM	EPFL
Pollution Explorers	IRCAM	EPFL
Reactive matter	INOVA+	INOVA+
SMART>SOS	IRCAM	IRCAM
The ideal showroom of IoT	ArtShare	ArtShare
The plants sense	ArtShare	ArtShare
Wind Avatar	IRCAM	IRCAM

Table 3: Distribution of the Residencies among VERTIGO Partners

Announcement of the laureates

The Jury decided that no comment (private or public) would be sent out to the candidates. The winners and the secondary list have been presented in Avignon, the 11th of July in the event organized as part of WP5 (see Annex 2). Each candidate has then been notified about the result of his/her application and that the results were available online.

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Annex 1 – Official results of the first call for residencies

List name	Last name	First name	Gender	Citizenship	ICT Project	Title	Selected category
Primary	**Deval**	Yann	Man	French	WEKIT	ATLAS	1
Primary	**Aspinall**	Kate	Woman	British	AMORE	Blueprints For An Emergent Personality	1
Primary	**Kuusk**	Kristi	Woman	Estonian	MAGIC SHOES	Magic Lining	1
Primary	**Molga**	Kasia	Woman	British	GROW	Ode from the Dirt	2
Primary	**Tan**	Ling	Woman	Singaporean	hackAIR	Pollution Explorers	2
Primary	**Lasserre**	Gregory	Man	French	Programmable Matter	Reactive matter	1
Primary	**Roth**	Tim Otto	Man	German	Bio4Comp	SMART>SOS	2
Primary	**Kanno**	So	Man	Japanese	Create IoT	The ideal showroom of IoT	1
Primary	**Castellanos**	Maria	Woman	Spanish	Flora Robotica	The plants sense	1
Primary	**Ahmed**	Haseeb	Man	American	DANCE	Wind Avatar	1
Secondary	**Dumitriu**	Anna	Woman	British	Human Brain	Towards a Neurorobotic Chimera	2 or 1
Secondary	**Stock**	Mark	Man	American	ExaFLOW	Confluence	1
Secondary	**Rangsch**	Rona	Woman	German	QuNet	QuInStAILnEtS	1
Secondary	**Pasquali**	Francesca	Woman	Italian	C3HARME	COCOON: art is a shelter	1
Secondary	**Graf**	Roland	Man	Austrian	MONICA	METAZOA MONICA (Internet of Shoes)	1

Annex 2 – Announcement of the laureates

Results of the VERTIGO STARTS Residencies Jury, July 11th 2017

The public announcement of the laureates was made on July 11th 2017 simultaneously on the project web site and in the framework of a specific public event entitled "Europe, New Generation" organised as part of Festival d'Avignon in Cloître Saint Louis, together with two panels gathering high-level speakers from the artistic, ICT research and innovation worlds.

Figure 9: Announcement session at Festival d'Avignon

From left to right and back to top: Greg Beller (Jury chair, IRCAM), Hugues Vinet (VERTIGO coordinator, IRCAM), Pascal Keiser (General Coordinator, French Tech Culture), Paul Rondin (Deputy Director, Festival d'Avignon).

The announcement was jointly presented by Hugues Vinet (VERTIGO Project Coordinator) and Greg Beller (Jury chair) as follows:

Hugues Vinet:

The goal of the VERTIGO project, organised as part of the STARTS initiative of the European Commission, is to promote the role of artists as catalysers of innovation in collaboration with ICT R&D Projects, through 3 lines of action: a program of artistic residencies in collaboration with ICT

Projects, the development of a web platform for the STARTS community, and the organisation of a yearly public event at Centre Pompidou showcasing the residencies outcomes.

The VERTIGO STARTS residnecies programs foresees to allocate 900 k€ for funding 45 residencies in 3 yearly calls.

The 2017 call was published on March 13th and was organised in two successive stages :

- a call for R&D projects in Europe in the field of ICT and willing to host artistic residencies in relation to their innovation challenges. 39 ICT projects were selected by VERTIGO.
- a call for artistic residencies proposed by artists based on one of the selected ICT projects. Applications could be possibly jointly with third party producers bringing additional means.

Greg Beller:

- The Jury held on 3-4 July in Paris, a pool of experts from related artistic fields, executives of cultural institutions, experts in relevant technology fields and leaders in the industry and the innovation, was composed of :
    - Greg Beller (chair), Head of the Interfaces Research/Creation of IRCAM, Paris
    - Francesca Bria, Chief Technology and Digital Innovation Officer, Barcelona
    - Ludger Brümmer, ZKM, Karlsruhe, Germany
    - Paul Dujardin, Chief Executive Officer & Artistic Director Bozar, Bruxelles
    - Maud Franca ; Futur investment program of France
    - Laurence Le Ny, VP Start-up Content Ecosystem at Orange France
    - Benoit Meujan ; R&D Manager at Mikros Image, France
    - Irini Papadimitru, Program Manager at Victoria and Albert Museum, London
    - Marleen Stikker, President of the WAAG society, Amsterdam
    - Gerfried Stocker, Artistic Director of Ars Electronica, Linz, Austria
    - Jerôme Vercaemer ; Managing Director Cisco Consulting France, Paris

- The Jury selected 10 residency applications among the 89 received, which are the following, by alphabetical order:

Hugues Vinet :

Atlas proposed by **Yann Deva**l of French nationality together with **Marie-Ghislaine Losseau**, based on the **WEKIT** ICT project, with support as producers of Fédération Wallonie-Bruxelles, Wallonie Bruxelles International, COCOF (Commission communautaire française), and city of Moleenbek.

WEKIT stands for *Wearable Experience for Knowledge Intensive Training* and aims at developing a novel way of industrial training enabled by smart Wearable Technology, based on an open Technology platform for Augmented Reality for an holographic experience.

The ATLAS residency project proposed by Yann Deval and Marie-Ghislaine Losseau in relation to WEKIT aims to develop an interactive installation in which the spectators can build evolving cities which are a mix, using Augmented Reality, between real sketches of houses produced by 3D printing, combined with virtual elements.

Greg Beller

Blueprints For An Emergent Personality proposed by **Kate Aspinall** of British nationality, based on the **AMORE** ICT project.

AMORE for « A distributional MOdel of Reference to Entities » investigates how humans use language to talk about the world, and enables computers to understand us. The AMORE team is developing a model of linguistic reference implemented as a computational system that can learn its own representations from data.

Kate Aspinall's project is closely responsive to the process of the AMORE project: She is interested in the ways to conceive personality as an inevitable by-product of the linguistic learning process – how personality can emerge from actions in machines, just as it does in humans.

Hugues Vinet :

Magic Lining proposed by **Kristi Kuusk** of Estonian nationality, based on the **Magic Shoes** ICT project.

Magic Shoes develops wearable technology integrating sensory-feedback and body-tracking with the aim of improving body-representation, motor behaviour and emotion, and test this technology as a therapy for physically inactive persons or with sedentary lifestyles.

The Magic Lining residency project proposed by Kristi Kuusk in collaboration with Magic Shoes aims to design a garment, based on smart textile, and looks into possible ways of altering self-

perception from the inside of the garment : is there a way to change one's self-perception without relying on the feedback and the need for approval from other people?

Greg Beller :

Ode from the Dirt proposed by **Kasia Molga** of British nationality, based on the **GROW** ICT project, with support as producers of Future Everything, innovation lab for digital culture and annual festival, established in Manchester for 21 years.

The GROW Observatory empowers growers with collaborative knowledge to sustain soils, to grow healthier food, to learn more about sustainable practices, and to work together to validate the latest European Space Agency satellites to help society to adapt to extreme climate events.

"ODE from the DIRT" is a selection of audio/visual devices/sculptures/installations created by Kasia Molga in collaboration with sound artist Robin Rimbaud aKa Scanner. The data that comes from the soil and from the satellites will inform the artwork.

Hugues Vinet :

Pollution Explorers proposed by **Ling Tan** of Singaporean nationality, based on the **hackAIR** ICT project, with support of **FutureEverything** as Producer.

The overall objective of the hackAIR ICT project is to develop and test an open platform that will enable communities of citizens to easily set up air quality monitoring networks and engage their members in measuring and publishing outdoor air pollution levels.

The Pollution Explorers residency project by Ling Tan in collaboration with hackAir, is a participatory project consisting of a set of wearable tools co-created with the hackAIR community, that make use of hackAIR platform to help citizens make sense of the complex issues around air pollution. It combines wearable technology, IoT(Internet of Things), citizen participation and a crowdsourcing mobile app.

Greg Beller :

Reactive matter proposed by **Gregory Lasserre** of French nationality, based on the **Programmable Matter** ICT project

The ICT Project Programmable matter builds centimeter-scale robots that can stick together. Controlled by a program, this matter can change its shape.

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The concept of electronic clay crosses the artistic approach of Grégory Lasserre & Anaïs met den Ancx, known under the name Scenocosme. In most of their artworks, they explore the symbolic surface of the skin, it porosity and it various interactions with the environment where the technology is more and more present.

Hugues Vinet :

SMART>SOS proposed by **Tim Otto Roth** of German nationality, based on the **Bio4Comp** ICT project

The topic of Bio4Comp is parallel network-based biocomputation : the idea is that biomolecular machines, each only a few billionth of a meter (nanometers) in size, can solve problems by moving through a nanofabricated network of channels designed to represent a mathematical algorithm.

The SMART>SOS residency project by Tim Otto Roth in collaboration with Bio4Comp aims at developing a video and sound installation revealing this new paradigm of computation at sub-sub microbiological level by representing and rendering the evolution in the network of macromolecules composed of a tubular assembly of two proteins called « microtubules ».

Greg Beller

The ideal showroom of IoT proposed by **So Kanno** of Japanese nationality, based on the **Create-IoT** ICT project

Create-IoT stands for CRoss fErtilisation through AlignmenT, synchronisation and Exchanges for IoT, Internet of Things.

"The ideal showroom of IoT" is a two-part composition, a participatory installation with a capacity of one person. So Kanno shows what is possible to sense, recognise and determine by computer when we put sensors and cameras as much as possible. Furthermore, providing point of view from things to perceive post-IoT age perspective to things and technology.

Hugues Vinet :

The plants sense proposed by **Maria Castellanos** of Spanish nationality, based on the **Flora Robotica** ICT project

The objective of Flora Robotica is to develop and investigate closely linked symbiotic relationships between robots and natural plants and to explore the potentials of a plant-robot society able to produce architectural artifacts and living spaces.

The plants sense residency project by Maria Castellanos based on Flora Robotica is to to develop a plant-human interface, based on a wearable device, that enables to feel the plants senses through the skin and experience a new form of perception and relation with plants.

Greg Beller

Wind Avatar proposed by **Haseeb Ahmed** of American nationality, based on the **DANCE** ICT project

The DANCE ICT Project creates and enables the artistic experience of seeing dance and hearing music in normally seeing and in congenitally blind people through tactile sensation.

Working with the Brain and Emotion Lab, Haseeb Ahmed directly links a person to the wind, in his project "Wind Avatar". The Wind Avatar creates a direct relationship between a dancer and turbulence patterns in the wind. It allows a person to literally inhabit the wind and to offer a tactile sensory experience of visual phenomenon by employing the full-body sensation of wind blowing on a person's skin.

Hugues Vinet:

We presented the 10 residency projects selected by the Jury. In case one or several of these residencies cannot be implemented, the Jury defined a secondary sorted list of 5 residency projects, which will be allocated in the following order :

Greg Beller

First : Towards a Neurorobotic Chimera proposed by Anna Dumitriu and Alex May of British nationality, based on the Human Brain ICT project

Hugues Vinet :

Second : Confluence proposed by Mark J. Stock of American nationality, based on the ExaFLOW ICT project

Greg Beller

Third : QuInStAlLnEtS proposed by Rona Rangsch of German nationality, based on the QuNet ICT project

Hugues :

Fourth : COCOON: art is a shelter proposed by Francesca Pasquali of Italian nationality, based on the C3HARME ICT project

Greg Beller

Fifth : METAZOA MONICA (Internet of Shoes) proposed by Roland Graf of Austrian nationality, based on the MONICA ICT project, with the support of Assocreation as Producer.

Annex 3 – Jury Member Contract Template

VERTIGO JURY MEMBER CONTRACT

Between :

Institut de recherche et coordination acoustique/ musique, situated at 1 place Igor Stravinsky 75004 Paris, France, represented by Mr Frank Madlener, Director, hereinafter referred to as « IRCAM »

And

Name, address, hereinafter referred to as « Expert »

Hereinafter referred to individually as « Party » and collectively as « Parties »,

Considering that :

IRCAM is coordinator of the VERTIGO project supported by the European Commission, which organises the VERTIGO STARTS residencies program of artists in collaboration with research projects in the field of information and communication technologies (« ICT »). For its first open call published in March 2017 and closed in April 2017, VERTIGO has received applications and IRCAM is in charge of organising the selection of the applications by an international jury (« Jury ») made of a panel of high-level experts.

It is been agreed that :

Article 1 – Object

The Expert will participate in the Jury and contribute to the selection of the received applications according to the published selection criteria of the VERTIGO STARTS residencies call.

This Expert's participation will consist in :
- the remote evaluation of circa 20 application files using the online Ulysses platform. This evaluation shall be completed online at the latest by June 29th ;
- His/her attendance to the jury physical meeting at IRCAM headquarters in Paris, on July 3rd (11 am- 6 pm) and July 4th (9:30 am – 4 pm) 2017.

Article 2 – Grant and expenses

Provided that all expected elements of participation defined in Article 1 are fulfilled, and that all provisions of the current contract are respected, IRCAM will pay an amount of 500€ (five hundred euros) excluding VAT upon reception of an invoice of a legal entity to which the Expert is affiliated, mentioning the name of the Expert and

his/her participation in the VERTIGO STARTS 2017 Residencies program selection jury.

In addition, IRCAM will organise the Expert's travel from his/her living place to IRCAM's headquarters and his/her accomodation in Paris in conformance to its standard travel and subsistence funding rules.

Article 3 – Contact
The contact person at IRCAM, responsible for the Jury selection process is Mr Greg Beller, head of Research/ Creation Interfaces, IRCAM. Email : greg.beller@ircam.fr

Article 4 – Confidentiality

Any information (« Confidential Information ») that the Expert will access to for the execution of the current contract shall be a priori considered as confidential, including contents of applications, exchanges between the Jury members and results of the Jury selection.

The Expert hereby undertakes, for a period of 4 years after the end of the Project:

- not to use Confidential Information otherwise than for the purpose for which it was disclosed;
- not to disclose Confidential Information to any third party without the prior written consent by IRCAM;
- to return to IRCAM on demand all Confidential Information which has been supplied to or acquired by him/her including all copies thereof and to delete all information stored in a machine readable form. The Expert may keep a copy to the extent it is required to keep, archive or store such Confidential Information because of compliance with applicable laws and regulations or for the proof of on-going obligations.

The above shall not apply for disclosure or use of Confidential Information, if and in so far as the Expert can show that:

- the Confidential Information becomes publicly available by means other than a breach of the Expert's confidentiality obligations;
- IRCAM subsequently informs the Expert that the Confidential Information is no longer confidential;
- the Confidential Information is communicated to the Expert without any obligation of confidence by a third party who is to the best knowledge of the Expert in lawful possession thereof and under no obligation of confidence to the Disclosing Party;
- the Confidential Information, at any time, was developed by the Expert completely independently of any such disclosure by IRCAM; or
- the Confidential Information was already known to the Expert prior to disclosure or

- the Export is required to disclose the Confidential Information in order to comply with applicable laws or regulations or with a court or administrative order.

Article 5 – No conflict of interest

In case the Expert identifies a potential conflict of interest with one or several application files, due in particular to his/her proximity with or competition to actors of the application which may positively or negatively influence the impartiality of his/her judgement, he/she commits to signal it with no delay to IRCAM and refuse to evaluate to corresponding applications.

Article 6 - Attribution of Jurisdiction
This Agreement is governed by French law.
In case of any dispute, execution, or termination of this contract, the partners agree to submit to the Tribunaux de Paris, but only after all amicable ways (such as conciliation or arbitration) have been exhausted.

Date :

For IRCAM   The Expert

Mr Frank Madlener, Director   Name

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Annex 4 – Jury meeting program

VERTIGO - Call for Residencies 1 Jury meeting

Jury Program & Guideline

Monday the 3rd of July 2017:

• 11H-12H30: Introduction

    o Jury members

    o VERTIGO project

    o Selection process

• 12H30-14H00: Lunch (delivered to conference room)

    o Video interviews of Jury members

• 14H00-16H00: Round evaluation (2H00)

• 16H00-16H30: Break

• 16H30-18H30: Round evaluation (2H00)

    o Interviews

• 20H30: Dinner

    o Restaurant L'AG Les Halles, 14, rue Mondétour, 75001

Paris Tuesday the 4th of July 2017:

• 09H30-11H00: Round evaluation (1H30)

• 11H00-11H30: Break

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o Interviews

o Group photo

- 11H30-13H00: Round Evaluation (1H30)

- 13H00-14H00: Lunch (delivered to conference room) o Interviews

- 14H00-15H30: Round Selection (1H30)

  - 15H30-16H00: Conclusion, minutes (0H30) Please your personal computer.

Location:

France, Paris, Centre Georges Pompidou Piazza, Salle triangle (see below)

1. Centre Pompidou location

Place Georges-Pompidou, 75004 Paris Subway: Rambuteau, Chatelet, Hôtel de Ville
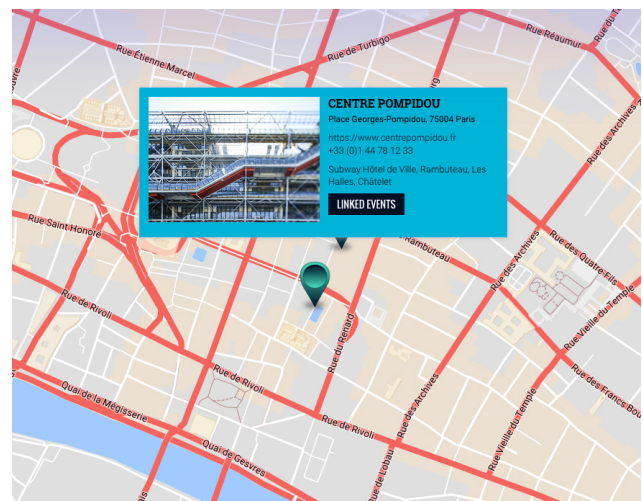
2) Location of the Salle triangle

How find the room "Salle triangle" at the Centre Pompidou ? You need to go at the Place Georges-Pompidou, the entrance is on the right side of the square when you are in front of the Center on the square.

The room entrance is indicated by the red arrow on the figure below

Annex 5 – Jury Minutes Template

VERTIGO STARTS RESIDENCIES 2017 CALL

Minutes of the Jury – 3-4 July 2017

The Jury held in Paris on July 3-4 2017,

made of :

Mr. Greg Beller (chair), Ms. Francesca Bria, Mr. Ludger Brümmer, Mr. Paul Dujardin, Ms. Maud Franca, Ms. Laurence Le Ny, Mr. Benoît Meaujean, Ms. Irini Papadimitriou, Ms. Marleen Stikker, Mr. Gerfried Stocker, Mr. Jérome Verckaemer,

decided the following :

1 – the list of the selected artistic residencies is indicated hereinafter; their acceptance is conditional to the fulfillment of the requirements appearing in the related commentaries if any, on the basis of the indicated funding Category:

Residency short name	Artist name	ICT project	Category	Commentary

2 – the sorted secondary list of selected artistic residencies is indicated hereinafter. They will be implemented in the mentioned order provided that the total number of implemented residencies does not exceed 10. Their acceptance is conditional to the fulfillment of the requirements appearing in the related commentaries if any, on the basis of the indicated funding Category:

Position	Residency short name	Artist name	ICT project	Category	Commentary
1					
2					
3					
4					
5					

Done in Paris on July 4th 2017,

53

Name	Signature
Greg Beller	
Francesca Bria	
Ludger Brümmer	
Paul Dujardin	
Maud Franca	
Laurence Le Ny	
Benoît Meaujean	
Irini Papadimitriou	
Marleen Stikker	
Gerfried Stocker	
Jérome Verckaemer	