



## SMART TEXTILES SALON 2015

### RED PERCEPTION

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## Main focus:

How the modern technological revolution is transforming the design process and dress functionalities :



How to touch the very movement of the virtual?

How to bring the intangible tangible?

How to glimpse the liquidity of the real and actual?

The “reflux” dress is a compositional experience that works with the synesthetic perception of movement. It deals with the intersection among design, art, and technology, seeking ways to sensitize an immanent virtuality in order to produce positive affects to a person's unique creative pulse. This new approach aims to surface the own subjective feelings of whoever access it through a liquid experience. The interaction between the dress and a dancer can be viewed here: <https://youtu.be/vlwpacRsPxQ>

This dress is made from 3D tactile fabric with XB anathemas, lily pad arduino, accelerometers, and conductive thread that controls the audio as well as the visualizations projected onto three screens. The sound and projections are “played” and manipulated by the fluidity, flexibility and mobility of the skirt. A playful environment of discovering meanings is built, where the output poetically weaves a relational communication to both the interactor's movement and the system's lines already modified by past interactions, turning visible multiplicity itself. In that way the space is hybridized, so that the virtual seems to gain the time of the actual inserted between the gap of the tangible and the intangible, bringing new ways of feeling and acting the surface.



DESIGN BY GALINA

# THE PROCESS

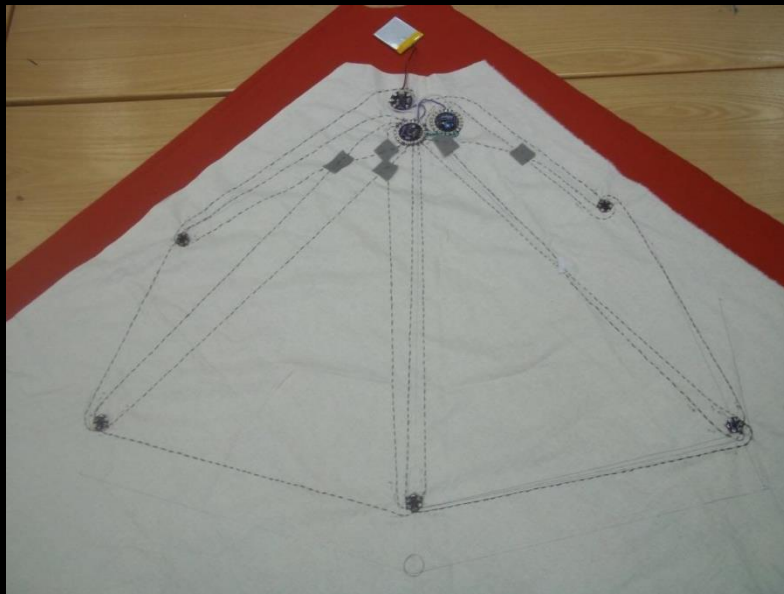




# TECHNOLOGY

- Based on Lilyypad Arduino technology, mainly composed by 5 accelerometers sewed with conductive thread on fabric. Tangible dimension of reflux, the instrument is a textile interface. An open hardware that has open purpose and usage, being able to be freely folded, twisted, tightened and manipulated in various contexts to generate real time digital data of its movement.
- The interface is built upon a fabric tissue given its physical particularities that, through its interaction in motion, are able to bring to senses characteristics related to virtuality such as: fluidity, flexibility and mobility. Therefore, a non-verbal and kinesthetic understanding of virtual liquidity with sensible feedback is caused.
- The current setup of the interface has a single Lilyypad Arduino, 5 Lilyypad Accelerometers, one Xbee Module, and a LiPo battery sewed altogether manually with conductive thread. Data is gathered by the accelerometers and sent wirelessly to a computer through Arduino and Xbee, where they will be reprocessed into some kind of output. The project also includes customizable software specially designed to receive the data from the interface.

# TECHNOLOGY



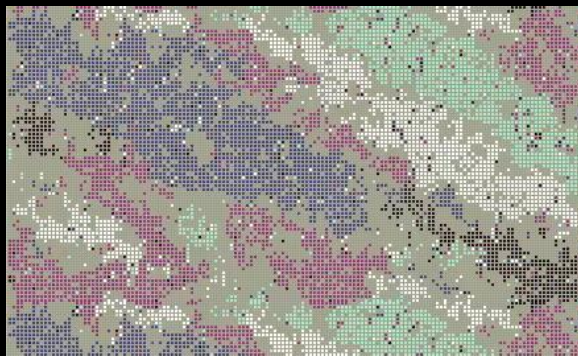
# TECHNOLOGY

Three digital systems constitute the visual installation: an organic digital web, a generative visual system and a generative sound system. In short, the first includes the data from the tangible interface into a cellular system, modifying its structure gradually by the interaction of multiple users. The other two compose the audiovisual feedback system, responding directly to the movement of the interface with qualities developed by the web.

Arduino

Processing

Supercollider



## Cellular automaton

- Emergence, self-organization and hybridization are the concepts behind this system. It consists of a cellular automaton that with the input of data from the Instrument constitutes an autonomous system with a certain degree of intelligence. Its function is to enable an organic feedback to the whole interactive experience, acting like a living organism that slowly adapts to the current interactor of the interface, continuously seeking new ways to interact with him uniquely.
- The data from the interface constantly alters the rules of five types of cells in the system. In real time, the patterns generated by these cells are remapped directly to the audio-visual feedback system.

## Audiovisual output

- A generative system that displays images and sounds reacting to the movement of the interface based on the digital cellular web hybridized in constant creation. Its composition seeks to affect the interactor through intensities and relations in motion, in order to maintain representation silenced to give space to an immanent relational universe, in a way that the meanings remain open to the point of awakening new types of emotions and feelings.
- The images seek to visualize the multiplicity in flow at the installation, and how it reacts to the interaction. It operates in an immersive way, exhibiting three consecutive planes concerning different points of view of the same multiplicity, in order that the only visible forms are the movements of the interaction in constant motion.
- The sound enables the interactor's immersion into a new space, expanding his perception to a field of affection. Three classes of sound coexist in the same landscape: a first simply turning audible the noisy movement itself, a second with harmonic affects that jump from the current formform of the fabric, and a third as a harmonic web in the background, giving consistence to the piece.

# RE-FLUX

FLUIDITY, FLEXIBILITY AND MOBILITY.





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FLUIDITY, FLEXIBILITY AND MOBILITY.



THANK YOU



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