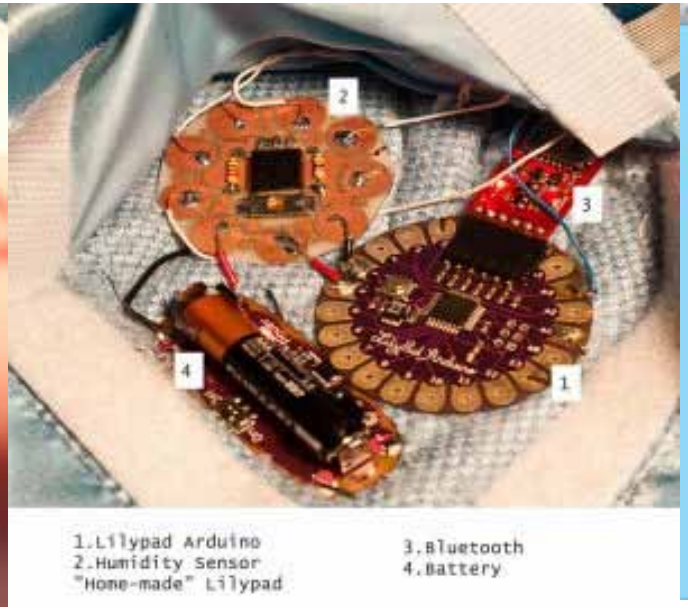
VISION:

WE GOT THE INSPIRATION FROM INTERACTIVE ART PROJECTS. IN THIS FINAL PROJECT WE WILL EXPLORE THE RELATIONSHIP BETWEEN TEXTILE SENSORS AND THE VISUAL ART. WE WANT TO CREATE A BLANKET WITH A MATRIX OF TEXTILE PRESSURE SENSORS LINKED TO A COMPUTER. SO ONCE PEOPLE PRESS THE BLANKET, THE PRESSED POSITIONS WILL CREATE SIGNAL INPUTS FOR THE LILYPAD, AND VISUALIZED IN THE SCREEN THROUGH PROCESSING. THE VISUALIZATION DOES NOT TELL THE ACCURATE PRESSURE POSITIONS (LIKE MOVEMENT RECORDER), BUT SHOWS THE MOVEMENTS AS ABSTRACT ART.

WE HAVE TWO IDEAS OF HOW THE BLANKET MAY WORK:



REMOTE TEMPERATURE AND HUMIDITY SENSOR FOR NEW PARENTS

by Daniel Freitas

The purpose of this project is to allow parents to remotely check both the temperature of their baby and the humidity of the diaper. I used wearable Lilypad technology sewn into a baby blanket.

"[...] 3. Wireless

I chose to use the Bluetooth Mate (description here) which was designed specifically to be used with the LilyPad Arduino."

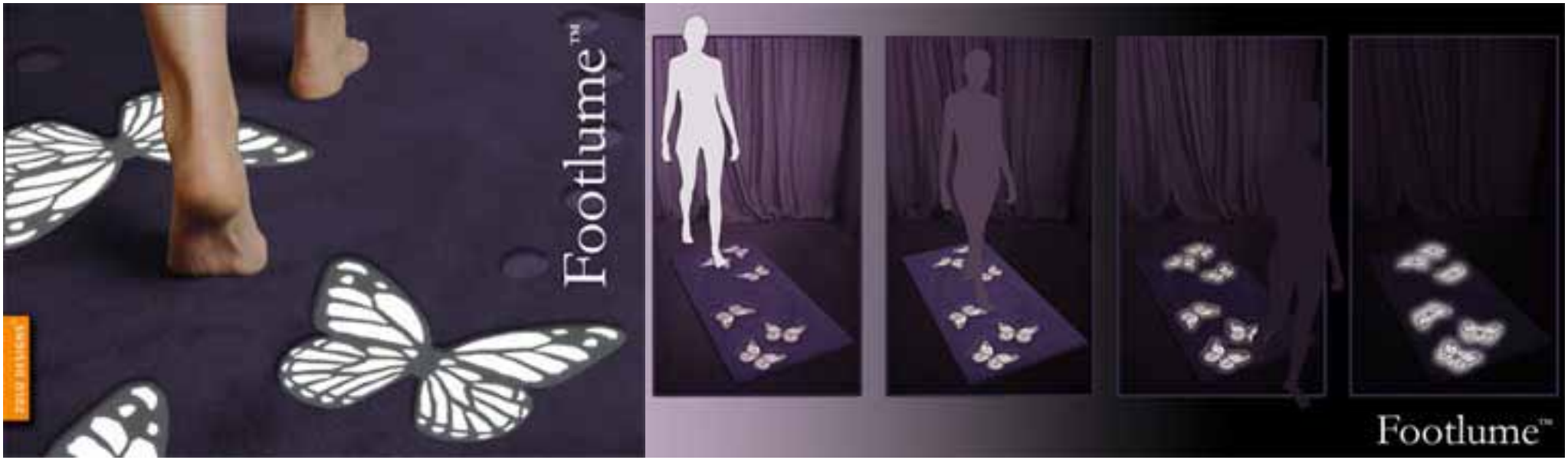
http://solarpanelspower.net/solar-power/solar-powered-blanket-saves-lives-in-africa

SOLAR POWERED BLANKET SAVES LIVES IN AFRICA

by iTEACH Blanket

This idea is being implemented by the iTEACH program in South Africa by tapping the mobile device to broadcast healthcare information. Women in local sewing hubs integrate flexible solar kits in the locally made African cloth to make a blanket. The patients use the blanket during the day to stay warm. Sunlight charges the unit in three hours, creating 6 watt-hours of energy stored in a rechargeable battery.

http://www.crunchwear.com/footlume-glow-rug/



FOOTLUME GLOW RUG

iTEACH Blanket

FootLume is an area rug that glows. Despite its artistic look, there are practical implications here. Pressure sensors on the rug activate electroluminescent designs to make the rug glow when stepped on. This is simialr to the WiFi detecting shirt we previously wrote about.

BROOKSTONE REMOTE CONTROL PILLOW STUFFED WITH A UNIVERSAL 6 IN 1 REMOTE CONTROL

This universal 6-in-1 remote control is nestled snugly inside of a pillow. The buttons are on the outside of the pillow and it even allows you to shut the remote functionality off for when you want to lay down without accidentally muting your episode of LOST. Not bad, right? It's a remote that controls up to 600 devices. It's both. It's only $30.

PILLOW TALK - INTERACTION DESIGN PROJECT BY JOANNA MONTGOMERY - AH THE HEARTBEAT! LOVELY PROJECT

Pillow Talk is a project aiming to connect long distance lovers. Each person has a pillow for their bed and a chest sensor which they wear to sleep at night. The chest sensor wirelessly communicates with the other person's pillow; when one person goes to bed, their lover's pillow begins to glow softly to indicate their presence. Placing your head on the pillow allows you to hear the real-time heartbeat of your loved one. The result is an intimate interaction between two lovers, regardless of the distance between them.

http://www.computescotland.com/live-wire-approach-to-illuminated-rugs-918.php

REMOTE TEMPERATURE AND HUMIDITY SENSOR FOR NEW PARENTS

Turkish designer Soner Ã–zenÃ§ has made an illuminated prayer rug that points the owner towards Mecca. The Sajjdah 1426 makes use of electroluminescent phosphor printing and Soner come up with the name, since sajjdah, means prayer rug and 1426 was the year of the Islamic calendar that 2005 fell under. The rug is designed to glow brighter when it is pointed towards Mecca thanks to an embedded compass.

http://www.inewidea.com/2009/07/23/8430.html

A FLOWER A DAY

How about a carpet that generates floral patterns after your every step? Sounds miraculous, doesn't it? Containing special nontransparent gel inside it, the blooming step flooring system forms visual flowers when you step on it and appears clear when undisturbed.

Activated by pressure the rug gently fades up and emits a soft glow
from it's inbuilt, low-power electro-luminescent surface.
After five minutes the glow automatically fades down.
Giving you enough time for your safe midnight journey to the lavatory or kitchen.
Go-Lightly
Pressure Activated Night Light.
Plus A Nice Rug.

GO-LIGHTLY

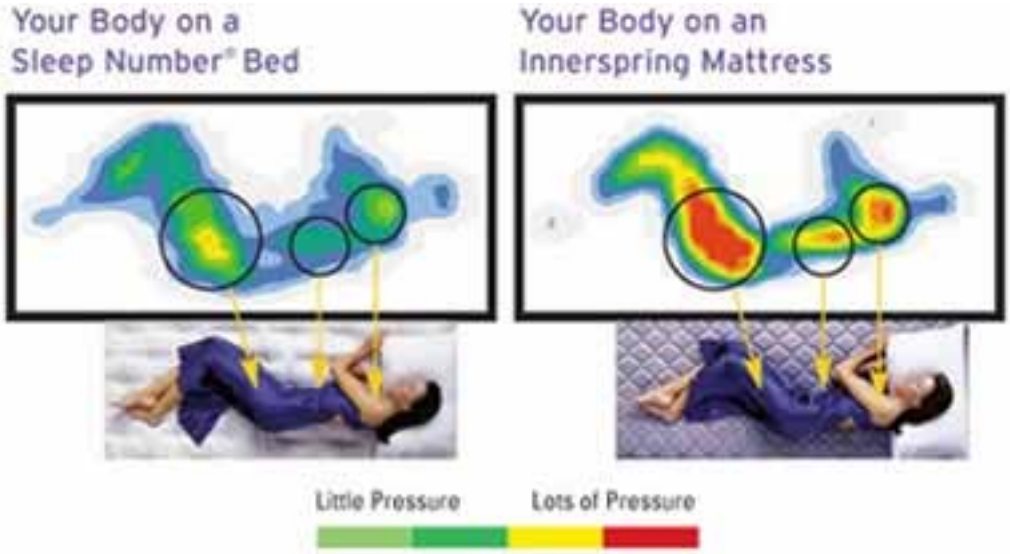
BODY STAMP SERIES: BLACK PAINT ON PAPER / GOLD PAINT ON PAPER

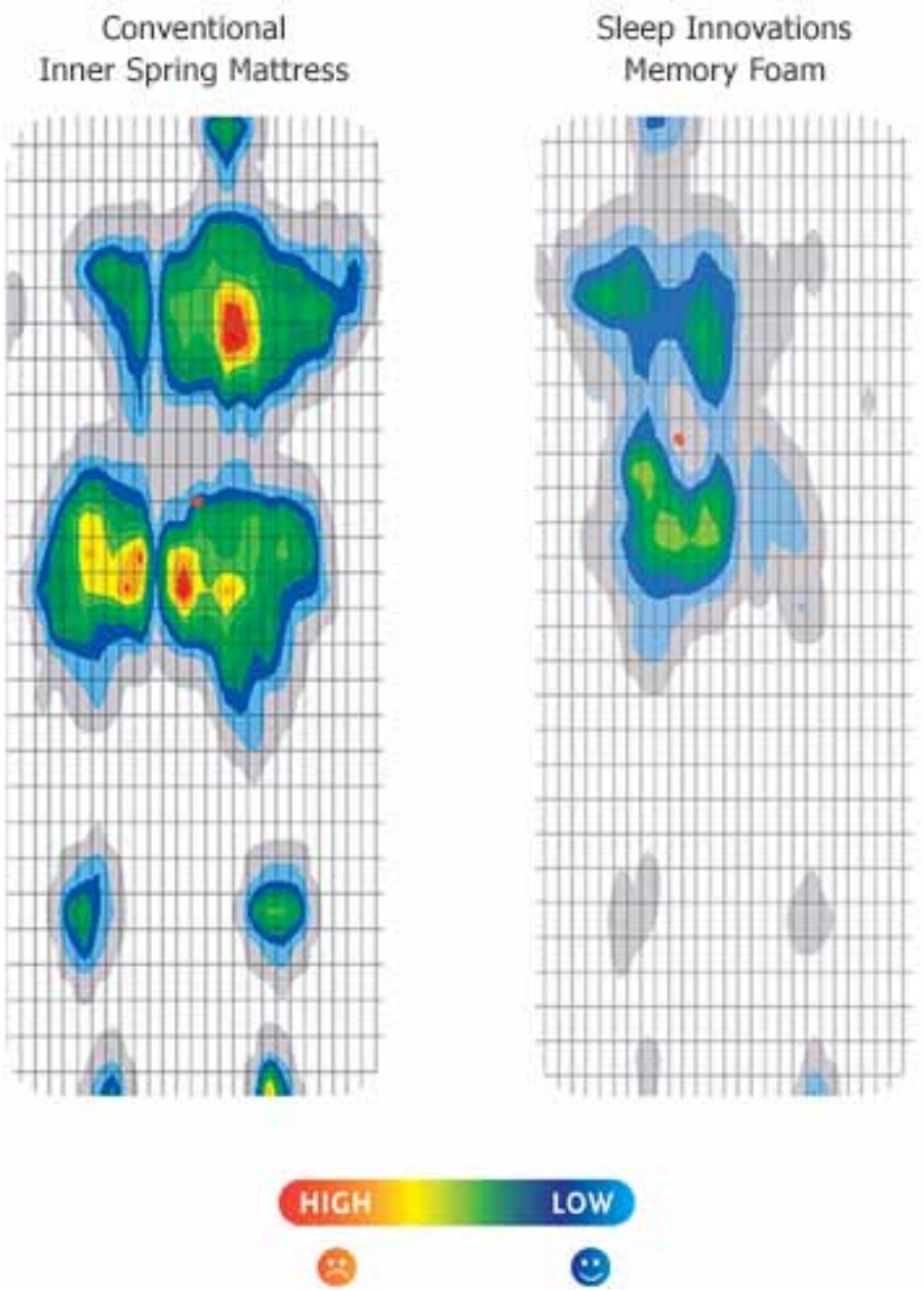
IS THERE A CLEANER WAY TO PAINT WITH YOUR BODY?

SOME IDEA FOR FORM?

sensors outputs?

SOME IDEAS FOR VISUALISATION AREAS (?)





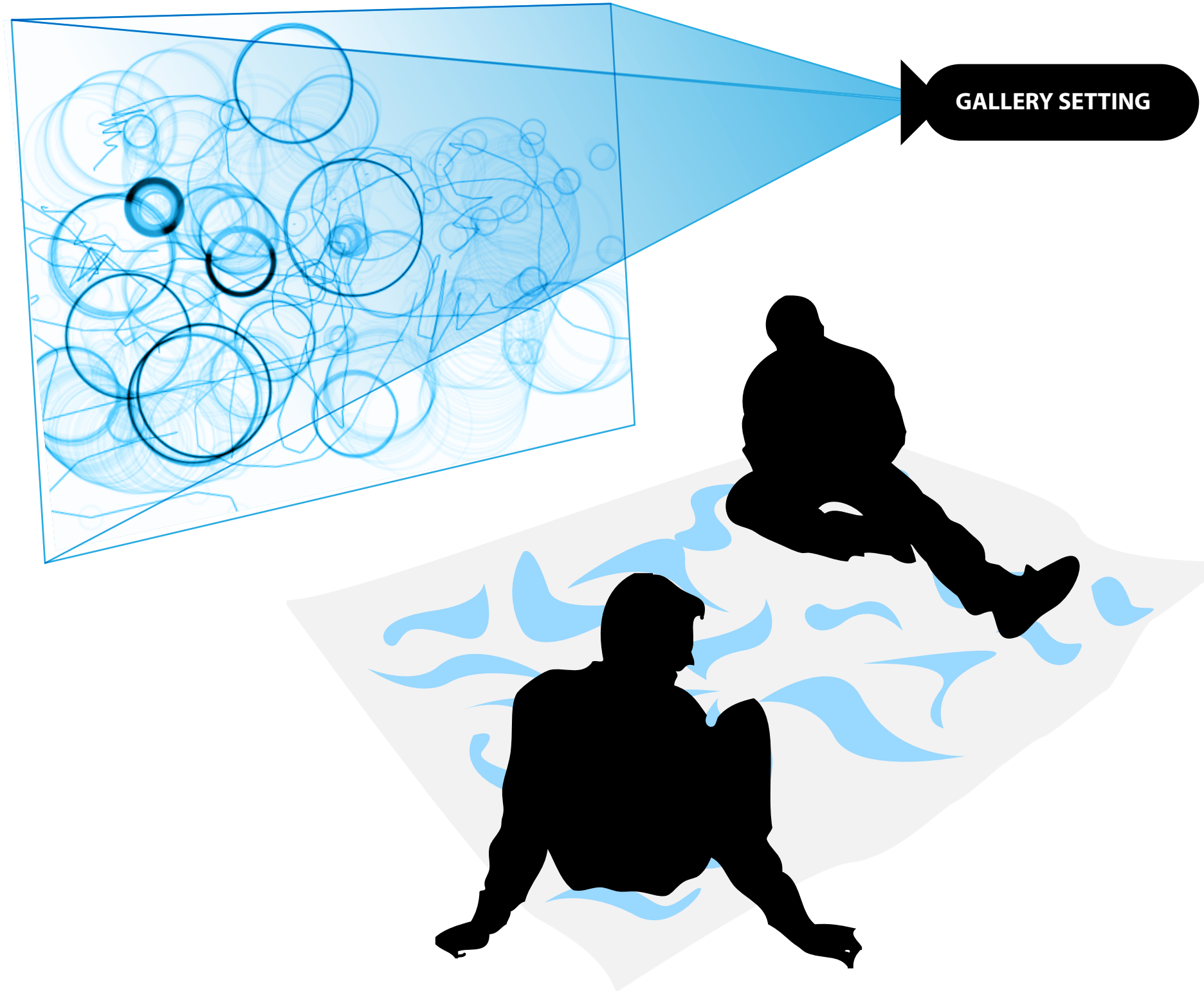
SOME OTHER THINGS THAT I HAVE FOUND:

PIANO GLOVES, PLAY SOUNDS WHEN YOU TOUCH SOMETHING HARD

PRESSURE ALARM MATT

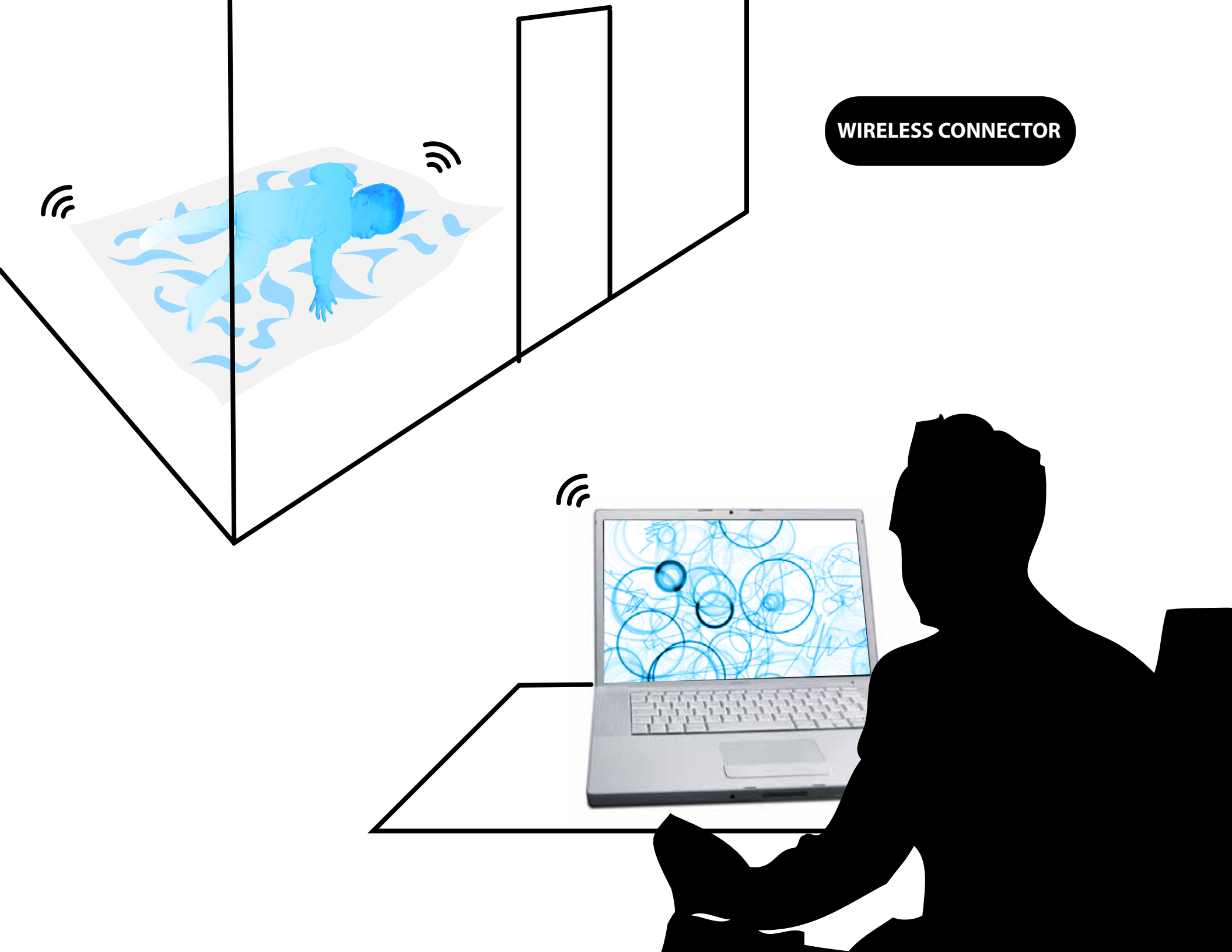
VERSION 1. INTERACTIVE GAME:

THE COMPUTER IS LINKED TO A PROJECTOR. SO ONCE YOU PRESS THE BLANKET, YOU WILL SEE THE RESULTS YOUR BODY CREATES ON THE BIG SCREEN. IT CAN BE PLACED IN PUBLIC SPACE AND YOU CAN PLAY WITH YOUR FAMILY OR FRIENDS.


GALLERY SETTING

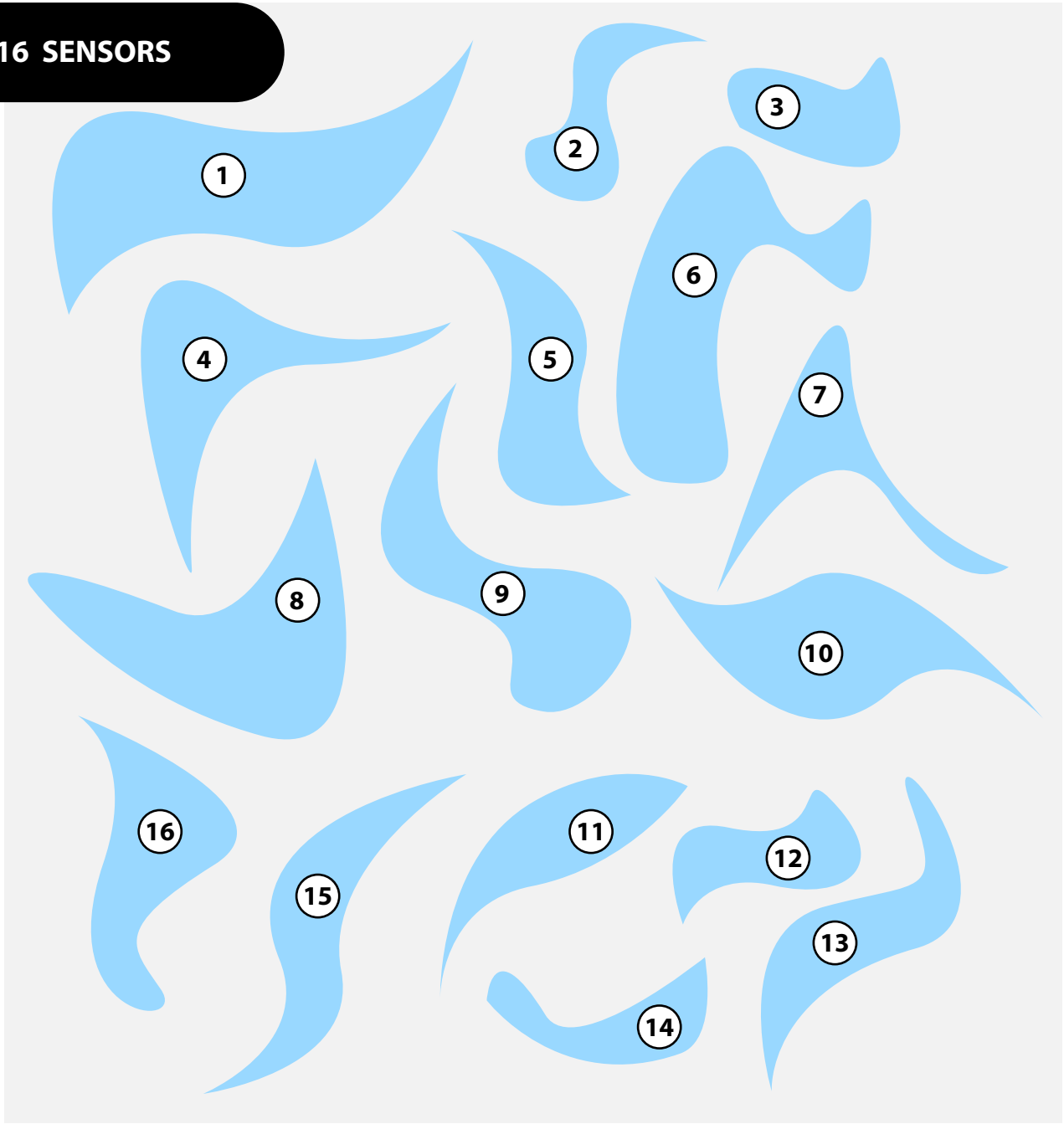
VERSION 2. LONG DISTANCE CONNECTING BLANKET

THE BLANKET IS CONNECTED TO THE COMPUTER THROUGH WIRELESS CONNECTION, WHICH CAN BE USED FOR NEW PARENTS OR LONG DISTANCE LOVERS. WHEN PERSON A GOES TO BED (LIES ON THE BLANKET), A WINDOW WILL JUMP OUT TO PERSON B'S COMPUTER SCREEN. AS A RESULT, THE PARENT CAN SEE THE BABY'S MOVEMENT ON BED WHILE COOKING IN THE KITCHEN, OR A PERSON CAN SEE HIS/HER LOVER'S MOVEMENT AT THE OTHER END OF THE EARTH.


WIRELESS CONNECTOR

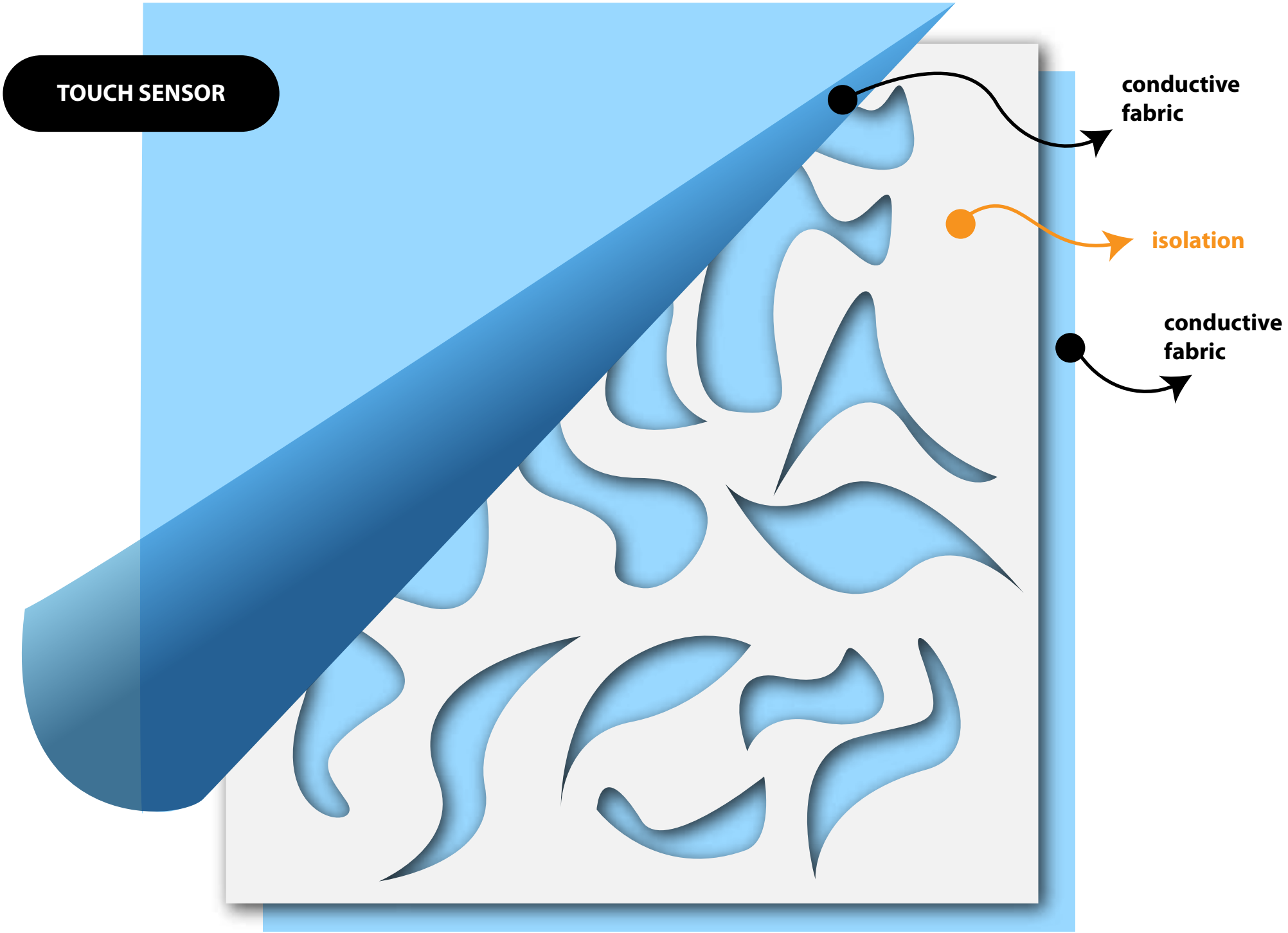
IRREGULAR SHAPES

16 SENSORS



WE ASSUME THAT EACH OF THE SENSORS WILL TALK TO THE LILYPAD AS A SEPARATE INPUT. IF WE USE 16 PIECES OF TEXTILE SENSORS, WE WILL HAVE 16 INPUTS FOR THE ARDUINO. THE OTHER WAY IS TO ADD DIODES TO EACH OF THE SENSORS TO ALLOW A BIGGER MATRIX. IN THIS PROJECT WE MAY JUST USE THE DIRECT CONNECTION.

FOR THE LONG DISTANCE DIALOGUE WITH THE COMPUTER, WE WILL START FROM BLUETOOTH. ALTHOUGH BLUETOOTH CANNOT BE USED FOR DISTANCE LONGER THAN 10 METERS, WE WILL USE IT FOR OUR FIRST STEP EXPERIMENT.


TOUCH SENSOR
conductive fabric
isolation
conductive fabric

ELECTRONICS:
18-INPUT LILYPAD;
FTDI BOARD;
BLUETOOTH MATE WITH LILYPAD;

EQUIPMENTS:
LASER CUTTER

MATERIALS:
CONDUCTIVE FABRICS;
CONDUCTIVE YARNS;
ISOLATION FABRICS;
SEWING ADHESIVE;
NORMAL FABRICS FOR BLANKET, YARNS...

SOFTWARE:
ARDUINO, PROCESSING

DISCUSSION:
WHAT KIND OF PRESSURE SENSORS CAN WE MAKE?
HOW CAN EACH OF THE SENSORS TALK TO THE ARDUINO?
HOW CAN WE VISUALIZE THE ACTIVITIES ON THE BLANKET (BY TIMING OR THE PRESSURE FORCE)?