

Logistics plan “Mommy Tummy”

A pregnancy experience system simulating fetal movement

● Mommy Tummy

Mommy Tummy is an interactive system that simulates pregnancy. A user wearing the “Mommy Tummy Jacket” can feel the fetus’s temperature, movement and heartbeat; also, by rubbing the jacket, communication with the fetus can be experienced. Within a few minutes the jacket will change in weight and size simulating a fetus’s growth over nine months. The moods and activity of the fetus will come in a manner natural to how a normal fetus develops.

An auxiliary screen displays the condition of both the fetus and the mother in each simulated month with a 3D model of the fetus.

● Exhibition

Mommy Tummy is an interactive system that simulates pregnancy. Mommy Tummy simulates the physical burden of pregnancy including fetal movement and fetal weight. Through this experience the user can feel the joys and difficulties of pregnancy. In addition, the user can affect the virtual fetus’s behavior with gentle or violent movements. Mommy Tummy simulates a fetus’s growth over nine months in the course of two minutes. The system simulates fetal weight, movement; and heartbeat while displaying the condition of both the fetus and mother.

The exhibition is constructed in 7 sections.

- ① A user puts on the “Mommy Tummy Jacket” (Exhibitor helps put on the jacket)
- ② The system displays a fetus’s growth over nine months in the course of two minutes. An auxiliary screen displays the condition of both the fetus and the mother in each simulated month with a 3D model of the fetus.



1st Month



3rd Month



9th Month

Information of fetus

- ③ Exhibitor takes a memorial photo in the ninth month.



Memorial photo

④ Interaction with the virtual fetus

Heavy physical exercise is discouraged until a stable period is reached.

When the user moves violently, the fetus enters a bad mood state and makes intense movements. On the other hand, when the user caresses the abdomen, the fetus enters a good mood state and makes steady movements. The system can simulate influence on the fetus resulting from such exercise.

Under these conditions, the exhibitor has the user try various movements, such as picking something up.



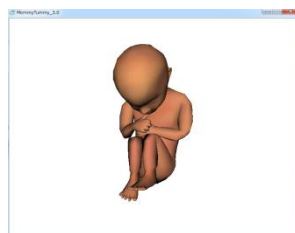
The user pick up a something

⑤ Result

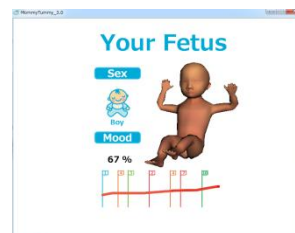
An auxiliary screen displays the condition of the user's baby.

Sex is determined at random.

The baby's mood is displayed as the user interacts with it.

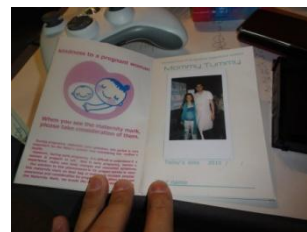


Interaction



Result

⑥ User receives a mother's pocketbook with the photo taken in section ③ pasted inside.



other's pocketbook

⑦ User removes the jacket (with Exhibitor's help).

●Requirements of Exhibition

○Air compressor

We use an air compressor to simulate fetal movement. The air compressor creates a 77 dB sound. That noise occurs when the 6 liter air tank becomes empty. We can isolate the air compressor from the exhibit space by using a long a tube. If possible, it is preferable to set up the air compressor outside of the room.

○Water

To simulate the growth and weight gain of a fetus, warm water is pumped into the water bag. The water bag prevents the user from getting wet. The warm water is kept in a connected tank at 37-38°C (99-100°F) using an electric water heater (910W, 100V).

●Setup

1. Fill the 8 liter water tank and heat it up to 40°C.
2. Set up the equipment, such as the PC and water pumps.
3. Connect the “Mommy Tummy Jacket” to the equipment.
4. Prepare the displays in the exhibition space, such as posters.

●Setup time

About one hour.

●Size of exhibition space

Size (width, length, height)	2.5m, 4m, 2m
Power supply	1000w (100V)
Sound environment	1 speaker Air compressor
Special resources	Water

Floor Plan

●Exhibitors

More than two people are required to exhibit.

●Equipment

- Laptop computer
- Water pump x2
- Water tank
- Electromagnetic valve control board
- Mommy Tummy Jacket

- Hose
- Water heater



Exhibition of Mommy Tummy