

# SUIRIN

Satoru Tokuhisa\*  
imgl, Keio University

Masa Inakage†  
imgl, Keio University

## 1 Introduction

*SUIRIN* (the content name comes from an ancient Japanese ball-shaped artifact called “*ukidama*” that is made of glass) is an interactive artwork of light and sound. The source of sound and light is derived from the space inside the *ukidama* which is expanded by a digital filter.

Users can interact with *SUIRIN* by touching and fumbling the water in the container. Through this interaction, the *ukidama* in the container spins out sound which is then sampled and processed, and finally let out to real space through surround speakers. The sound itself sounds like an insect’s chirping, which in the Japanese culture represents a pleasing and comfortable sound – a “sound scenery”. In addition, from the fog that simmers out of the container with sound and light, a first-hand experience of a magical real space is made possible through the content of *SUIRIN*.

An everyday use of *SUIRIN*, for instance, by placing it in the living room at home, a person who comes home worn out by work can simply reaches out to *SUIRIN*, and be relieved of pressure and healed by its soothing sound and lighting.

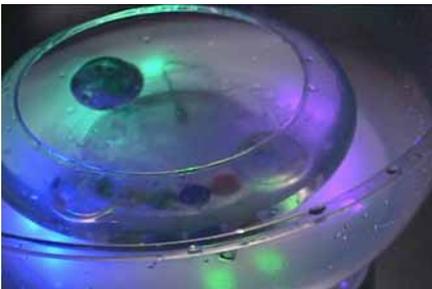


Figure 1: *SUIRIN* Image

## 2 Exposition

While being present in the *real* space, users can experience a delusion as if they are being melt into the water in the container. This delusion can be said to be *SUIRIN*’s core technology. The steps are as follows: firstly, the sound that is spun out in the container is sampled through four pin microphones; the sampled sound is filtered through FFT (Fast Fourier Transform). After the noise is reduced, it is processed through several steps of effect, until finally, a sound similar to a *suzumushi* (bell-ring cricket)’s cry is produced. At this point, the sound inputted by 4ch is outputted to 4ch surround speakers. In the mean time, the output level of a 4ch speaker is synchronized with the brightness level of the four colors of LED set up at the bottom of the container.

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\* e-mail : dangkang@sfc.keio.ac.jp

† e-mail : inakage@imgl.sfc.keio.ac.jp

There are several prior works based on the physical interaction of the traditional form of the controller of surround systems. However, there is no work so far done by using water as an interface. In other projects where water is used as the interface, they are used only as an interface of virtual installment. When musical instruments are used as the interface, the conflict of fluidity - in the accurate execution of the interface as well as water as a raw material - raises a problem.

*SUIRIN* is an interactive artwork involving the consistent maintenance of sound and light, that is designed for users’ comfort and amenity. Due to the intention to provide comfort in our everyday life, it is built with simplicity so that anyone can easily use it. On top of these functions, the content adopts the physical interactions of surround controllers; and as an interface, water is chosen because of its fluid quality, something that is not obtained by other sources. This content offers an avant-garde and soothing experience to its users.

## 3 Conclusion

The next step of the content is to apply a sensor system that reads users’ moods and sentiments. For example, when an user is depressed, the system sensors his/her emotions, and offers a more up-beat sound to brighten his/her mood. In addition, the content aims for the correspondence to network. In other words, through sound and light, users can convey their emotions to parties in remote places; and vice versa, to know how someone is doing in a distant place.

The content will expand according to the directions mentioned above to make a novel device to serve in people’s daily lives.

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## References

- Marissa Diaz and Isaac Rudomin. 2004. Object, function, action for tangible interface design, *Proceedings of the 2nd international conference on Computer graphics and interactive techniques in Australasia and Southe East Asia*.
- G. Huang1, D. Metaxas and M. Govindaraj. 2003. Feel the Fabric : An Audio-Haptic Interface, *Eurographics/SIGGRAPH Symposium on Computer Animation*.
- James Patten, Ben Recht and Hiroshi Ishii. 2002. Audiopad: A Tag-based Interface for Musical Performance, *NIME 02:New Interfacefor Musical Expression*.
- Tomoko YONEZAWA and Kenji MASE. 2000. Music by Fluid Input Investigation of Musical Instruments Using Water Sensing, *ICMC2000*.