

Information Technology on Five Senses

Research on the Five Senses by AIST is making great strides

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Information Technology of the Five Senses seen from the social perspective

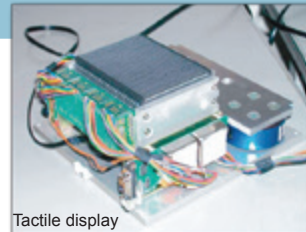
During the last several years, the terminology of “Information Technology on Five Senses” has garnered attention from various areas. As far as I remember, that wording was first used in a report submitted by the Electrical Communications Technology Meeting: “Basic Plan on Information Communications Research Development”. My recollection of that time paints it as a suggestion that we would need to investigate such a new field and to explore it because we had entered into a situation in which new information interface technologies, such as virtual reality (VR) technology, were beginning to be introduced. More than four years have passed since then, and this wording now seems to imply that this technology is rather closer to the industrial world in addition to its recognized importance as a keyword in research work.

We could say that one background in which these changes are occurring is that our society is now more mature than ever. People now demand not products made based only on functionality and effectiveness, but those products that penetrate into our sensations. Now, five senses technology is required to produce such products to satisfy people’s demands.

One more interesting aspect of technology is that information technology itself has changed to a mobile-type: it is becoming much clearer to everyone that we are facing a new phase of technology. Mobile-type information processing can function while the user is moving physically from one place to another. Therefore, we require new types of interfaces that differ starkly from ordinary visual interfaces. The Information Technology of the Five Senses is thus requested to exist in the sense of multi-level modality.

AIST’s research topics that are fully associated with Information Technology of Five Senses

One field that is associated with this technology in AIST is the information communications field. However, it is certain that the Information Technology on Five Senses is now leading the field to a new direction. Now that information processing technology is greatly progressed, say, to the extent of what it can achieve, it is more important to discuss what we might construct on top of that foundation. In other words, what could we possibly need in the upper levels of human structure? Research exploring Information Technology of the Five Senses is similar to that exploring human sensations. We could say that such subjects are closely related to the upper levels of human structure.



Tactile display



System of remotely acquiring image data in an ambulance

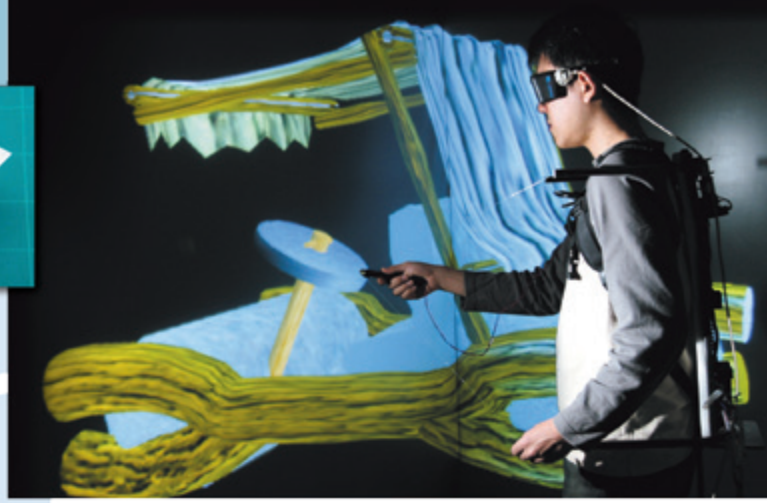




Remote support system for visually impaired persons



Thin-film pressure sensor



Wearable type tactile display (provided by Research Center for Advanced Science and Technology of Tokyo University)

Medical and welfare industry

Industry of various sensors



Mobile audiometer



Color rendering equipment

Industries supporting businesses of education, culture, and leisure



Life supporting robot system



Safe driving support system

Another field that is associated with research on the five senses is life science. The Information Technology of the Five Senses is a new research field that functions astride the studies of information technology and life science. Especially, it implies the possibility that it brings basic research work of life science to IT industries in a wholly different context. What is interesting in life science research work is the fact that new techniques like genetic research are beginning to be added dynamically to traditional research on human sensation. For instance, some new genes have been found for the sense of smell, which has been said to be a relatively enigmatic sense. In this manner,

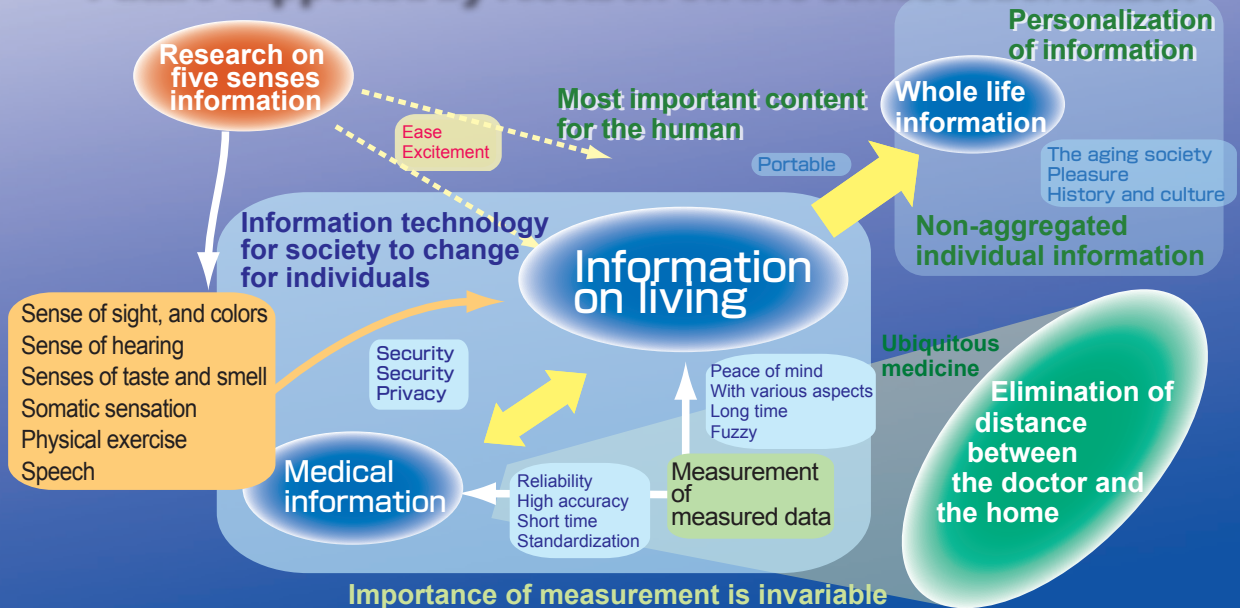
Wearable type olfactory display (provided by Research Center for Advanced Science and Technology of Tokyo University)



new knowledge is added gradually.

I feel sure that Information Technology of the Five Senses is the vanguard of a new current in our industrial world that has tended toward a standstill.

Future supported by research on five senses information



figures : by Takashi Hiraga (Principal Research Scientist of Photonics Research Institute)