

1 We should contribute to the preservation of cultural resources on a global point of view by taking the lead in establishing remote sensing technology for cultural resources (e.g., utilization of earth observation satellite data). Moreover, in order to learn more about what is under the earth's surface, we must develop new exploration technology; we must understand subsurface conditions before excavation is actually carried out. In addition, a sensor fusion system should be developed to efficiently explore beneath the soil. Various geophysical techniques such as ground penetrating radar (GPR) and electric prospecting are applied at the same time in order to ensure efficient exploration.

2 Regarding radiocarbon dating with AMS (Accelerator Mass Spectrometry) in which age is determined by direct counting of radiocarbon atoms, it is generally required to improve accuracy of age and efficiency of throughput. It is also necessary to make research on dating for smaller and smaller samples, possibly to minimize the damages on cultural resources.

3 Regarding the development of methods and techniques for scientific analysis of cultural resources, statistically calculating the performance limits of the equipment is a method of improving the accuracy of scientific analysis, which tends to decrease due to various factors. Researchers studying cultural resources should actively participate in the development of up-to-date analysis equipment for cultural resources.

4 Regarding the preservation and restoration of cultural resources, one should promote research and development that actively introduces the latest science and technology. Moreover, methods should be developed and promoted for promptly clarifying the reasons for deterioration of cultural resources in the case of the display of artifacts at exhibitions as well as technology that controls underground water to assist in the preservation of cultural resources and the development of preservation materials. In addition, the technological development of restoration simulations should be promoted as they enable us discuss two or more alternatives to improve decisions on restoration policy.

5 Development of mechanisms to pass on intangible cultural assets, e.g. the pressure applied by a craftsman's hand can be measured while he is working; his image and delicate sense of touch are recorded, and slight variations in power can be reproduced. Moreover, a system that automatically records and preserves tangible and intangible cultural properties as highly accurate three-dimensional digital images should be developed.

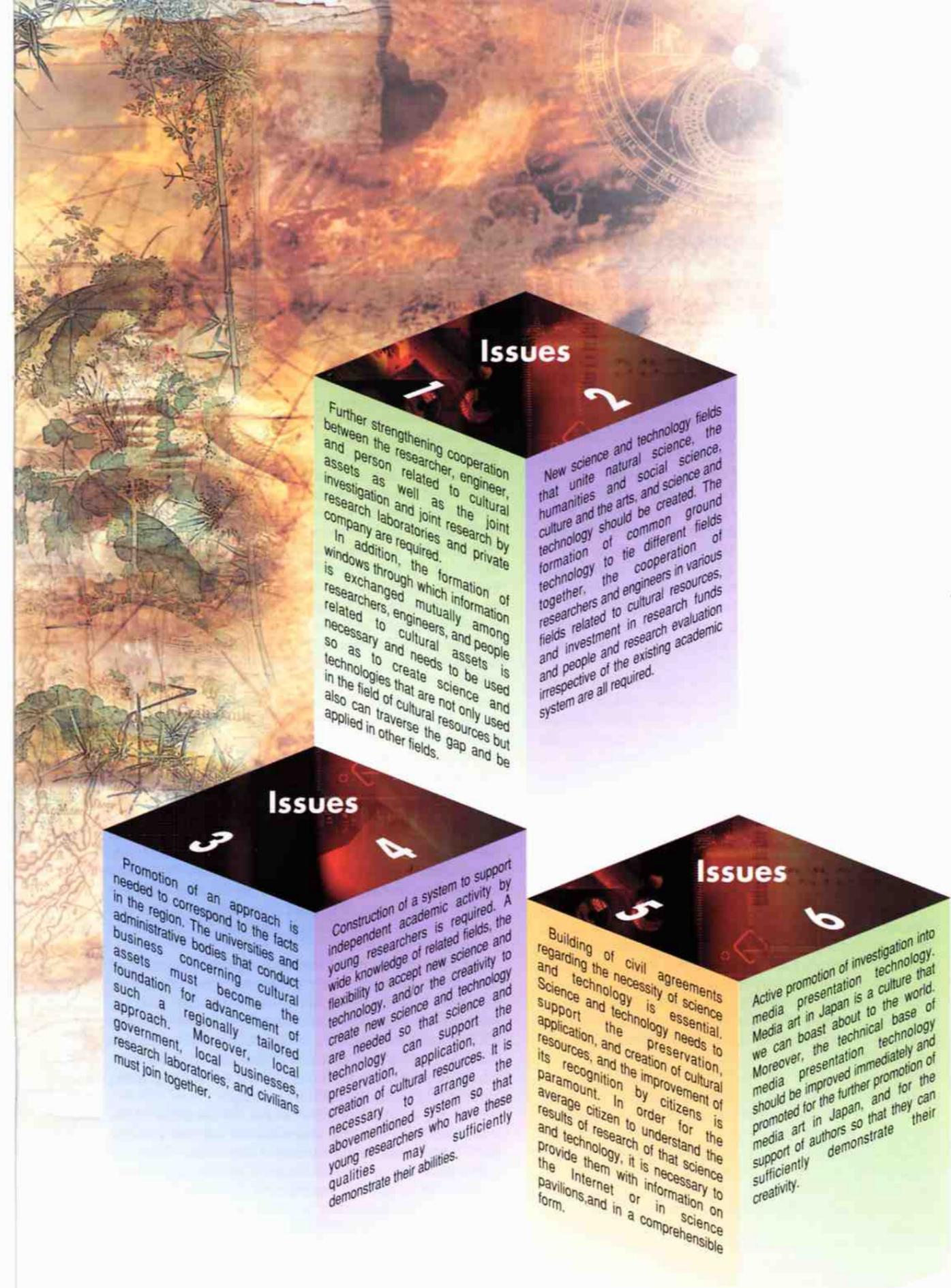
6 Science and technology should support the preservation and application of cultural resources, and the technical cooperation of such should be conducted from the perspective of contributing to the promotion of preserving international cultural resources.

7 Developing research into Virtual Reality technology will enable the following:

- 1) Cultural resources will become electronic information that can be preserved.
- 2) At the actual site, Augmented Reality technology should be used to superimpose a three-dimensional image.
- 3) Without going to the actual site, people can virtually experience it using telexistence technology. In addition, new Virtual Reality technology should be developed by using robot technology.

8 It is necessary to research enterprising 3D (three dimensional) and digital techniques as a technology related to the media art of Japan. Moreover, a system in which artists, writers, and engineers cooperate on technological developments and which promotes their interactions is necessary to promote the media art.

9 Many people can demonstrate creativity, so the research and development of information-processing technologies such as image-compositing and image-editing technology, technology that reproduces color and texture, interactive search technology, and type-value conversion technology of craftsman's skill and knowledge will support the creation, application and conveyance of culture and the arts.



Issues

1 Further strengthening cooperation between the researcher, engineer, and person related to cultural assets as well as the joint investigation and joint research by research laboratories and private company are required. In addition, the formation of windows through which information is exchanged mutually among researchers, engineers, and people related to cultural assets is necessary and needs to be used so as to create science and technologies that are not only used in the field of cultural resources but also can traverse the gap and be applied in other fields.

2 New science and technology fields that unite natural science, the humanities and social science, culture and the arts, and science and technology should be created. The formation of common ground technology to tie different fields together, the cooperation of researchers and engineers in various fields related to cultural resources, and investment in research funds and people and research evaluation irrespective of the existing academic system are all required.

Issues

3 Promotion of an approach is needed to correspond to the facts in the region. The universities and administrative bodies that conduct business concerning cultural assets must become the foundation for advancement of such a regionally tailored approach. Moreover, local government, local businesses, research laboratories, and civilians must join together.

4 Construction of a system to support independent academic activity by young researchers is required. A wide knowledge of related fields, the flexibility to accept new science and technology, and/or the creativity to create new science and technology are needed so that science and technology can support the preservation, application, and creation of cultural resources. It is necessary to arrange the above-mentioned system so that young researchers who have these qualities may sufficiently demonstrate their abilities.

Issues

5 Building of civil agreements regarding the necessity of science and technology is essential. Science and technology is essential, support the preservation, application, and creation of cultural resources, and the improvement of its recognition by citizens is paramount. In order for the average citizen to understand the results of research of that science and technology, it is necessary to provide them with information on the Internet or in science pavilions, and in a comprehensible form.

6 Active promotion of investigation into media presentation technology. Media art in Japan is a culture that we can boast about to the world. Moreover, the technical base of media presentation technology should be improved immediately and promoted for the further promotion of media art in Japan, and for the support of authors so that they can sufficiently demonstrate their creativity.