ICT-enhanced Human-Environment Interactions

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Human uses his or her eyes, ears, nose, tongue, and skin to sense surrounding environment and construct cognized reality. However, Information Communications Technology (ICT) may expand human senses, extend experiences, improve the interactions between human and environment, and better understand the "reality" of the outside world. This session will explore how these ICT-enhanced devices, sensors, and simulators can be designed and implemented for human to interact with environment, and what impacts, benefit, cost, usefulness, and harm will be brought to human beings and environment. For example, air quality sensors can be installed in school campus, such that the degrees of PM 2.5 and polluted matters can be "observed." Once it reaches a threshold, warning messages will be issued, students may be advised to stay in classrooms and buildings, and some actions will be taken correspondingly. Furthermore, a computer based simulator for emergency response can repeatedly train the local commanders for getting experiences which they may not have the chance to learn how to react properly before a real disaster occurs. Even in an ordinary situation, it may be difficult for senior people to travel around. It needs the help by smart devices designed from the viewpoints of the senior citizens to provide appropriate services. In the case of digital museum, remote visitors can enjoy the collections of museum. Moreover, they may play with the collections in a virtual way beyond the experiences in museum where collections may be disallowed to touch. In other words, using technology of augmented reality, museum visitors may have more fun and experiences than before. Other applications are encouraged to be presented in this session.