

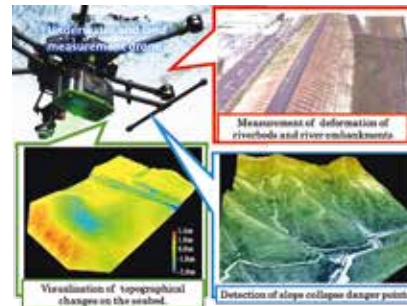


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Development of disaster prevention / mitigation technology using ICT technology

Disasters caused by typhoons, heavy rains and earthquakes occur frequently in Japan. In my laboratory, we are developing cutting-edge monitoring technology that Japan boasts to the world, such as digital images and UAV laser measurement. By using this technology to diagnose the soundness of infrastructures, we aim to create a country that is resilient to disasters. We are developing 3D measurement methods using IoT technology using UAVs and vehicles, and big data analysis technology using artificial intelligence. This ICT (Information and communication technology) makes it possible to discover slope collapse danger points, measure deformation of riverbeds and river embankments, and visualize topographical changes on the seabed.



Development of civil engineering design, construction and maintenance technology by BIM using 3D data



The ground survey results and structure design data are expressed as a three-dimensional model in the virtual space on the computer. This 3D data is used to perform a simulation to investigate how much seismic motion the structure can withstand. Furthermore, using AR (Augmented Reality) and VR (Virtual Reality) technologies, we will create an efficient construction plan using automatically moving construction machines. In addition, by superimposing the data of structures measured at different times and investigating the location where deformation has occurred, effective maintenance of the structure is possible. In this way, in my laboratory, you can learn the latest civil engineering structure design, construction and maintenance technology in Japan using BIM (Building Information Modeling).