Digital Twin ：A comprehensive look at the Disaster impacts

The application of digital twin technology in building smart cities is becoming increasingly clear, serving as a crucial engine for driving urban transformation. In the development of smart cities in recent years, citizens can view the growth and development of the entire city, including population growth, new construction, and other major activities, in a 3D format, gradually emphasizing the concept of a virtual city. Digital twin technology can simulate disaster scenarios, including weather events and traffic accidents, assisting disaster response personnel in rapidly understanding the situation and optimizing the efficiency of disaster response. In recent years, with the advancement of aerial photography, simulation technology, and computing resources, The National Science and Technology Center for Disaster Reduction has leveraged advanced technology to create a mountainous flood inundation model system. This system enhances disaster warning and impact analysis, providing a comprehensive view of vulnerable settlements. It utilizes dynamic models and virtual-real integration, presenting alert information and disaster impacts through visual elements, contributing to informed decision-making in disaster situations.