Earthquake-Disaster Digital Twin of Condominium/Apartment Complex for Realizing Strong Resilient Society

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Summary :

We will develop "Earthquake-Disaster Digital Twin" of Condominium/Apartment Complex that predicts damages of residential buildings and their functions as well as residents' response under large-scale earthquakes. we can make our society resilient by utilizing this digital twin. For this purpose, we will make the following researches:

Construction of "Earthquake-Disaster Digital Twin"

By using big-data of urban areas and applying machinelearning and other data analysis, a digital twin that predicts earthquake motions, calculates vibration response of buildings, evaluates damage of housing functions and residents' response and visualizes the output will be developed.

Realizing Resilient Society by The Digital Twin

Methodologies of risk communication in residents and stakeholders and frameworks for decision-making utilizing the Digital Twin will be developed based on understanding residents' behavior options. Also, a surrogate model of the Digital Twin will be constructed by Physics-Informed Neural Network for facilitating introduction of optimized disastermitigation measures.

Human-centric Digital Twins Services Utilizing AI, Big Data and IoT



