Plans to Apply Digital Twin to Smart City

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Summary

1. (Smart city tasks) The smart city is expected to achieve rapid growth over the next 10 years, thus the government has implemented policy actions to promote the smart city by designating model cities lacking preparation in that regard. Efforts are needed, however, to resolve problems caused by existing smart cities such as disconnection between services, lack of civic participation, and insufficiency of usable data.

2. (Role of digital twin) The digital twin, a core platform for the smart city, is a place where interested parties such as technicians and citizens gather and discuss related issues, monitor and control the condition of facilities and traffic situations, and analyze, simulate, and estimate the situations based on accumulated data to resolve smart city issues.

3. (Considerations for application) The following considerations must be applied when utilizing the digital twin to a smart city: a) a city consists of numerous elements and has complex urban issues; b) related institutions and systems need implementation alongside each other; and c) a digital twin at the city level is required and an alternative is needed if estimation at the city level fails.

Policy proposals

① Model and experimental projects need implementation on different fronts to apply the digital twin to a smart city.

- First, technical applicability must be examined through an academic approach achieved through the participation of the humanities and social science sectors.

- Based on this examination, a data standard is needed as well as a common platform able to interlink with different systems.

② A strategy for data governance, not system establishment, can effectively apply the digital twin.

- The establishment of a data-based government from a long-term perspective and the development and application of analytic methods to utilize data require stimulation. The government should also devise encryption plans to resolve personal information and security issues and support such efforts systematically.

- The private sector must participate in the process by releasing data in real terms.

③ The government must discard its short-term perspective of existing smart cities focused on technicians and providers and designate policy directions centered on a range of experiences and knowledge from a long-term perspective.

- It must lay the basis for accumulating and sharing experiences and knowhow accumulated from the implementation and results of model and experimental projects.

- Based on this foundation, a taskforce with a long-term perspective and a sustainable committee that can spread the application of leading benchmarks across the nation are needed.