

**Approaches to Achieving a Real- and Virtual-Linked “Smart Korea”
and Tasks for Practice**

Lim Si-young (KRIHS associate research fellow)

Summary

1. (Avenues to achieve smart spaces synchronizing real and virtual Korean space) Developments in the Internet of Things (IoT), big data, and AI technology have led to the growing importance of cyber-physical systems (CPS), a form of technology that applies “smart services” unconstrained in terms of time, place, or target throughout Korea’s territory through the synchronization of real and virtual space.
2. (Characteristics of CPS) Through the concept of “hyper-connectivity,” the Fourth Industrial Revolution is expected to integrate the country and cities’ physical bases with CPS to achieve greater efficiency, convenience, and safety in national infrastructure
3. (Avenues to achieve a CPS-based “smart Korea”) Achieving a “smart Korea” where people and things are hyper-connected will need to start with the discovery of areas where CPS technology can be applied (including hyper-connection and simulation), followed by a step-by-step expansion in spaces and issues and their interlinkage.

Policy implications
<p>① Discover and implement pilot problem-solving projects to achieve hyper-connectivity in real and virtual space</p> <ul style="list-style-type: none">- Develop pilot CPS for repair, long-term maintenance, and optimization of urban infrastructure closely linked to people’s lives (public safety applications in terms of earthquake, flooding, and other disaster prediction; disaster information; and sharing of optimal evacuation routes); identify projects for government-private cooperation to address traffic congestion, traffic volume control, and traffic accident handling issues- Implement comprehensive program, from development of individual problem-solving CPS to test bed establishment and institutional adjustments
<p>② Draft short- and long-term road maps for CPS-based smart villages, cities, and country</p> <ul style="list-style-type: none">- Given the pace of ICT advancements, achieving a CPS-based smart Korea will require private-government cooperation on systematic planning and focused investment, as well as

short- and long-term road maps

- Rather than the immediate effects of smart city and smart renewal efforts, the focus should be on sustained advancements, adopting a long-term perspective in reappraising performance from the basic technology to application stages.