

“The cute Tayo bus visits residents on its own to open an unmanned convenience store and operate a health checkup service” GIST-KATECH, pilot operation of a future mobility untact service platform equipped with an eco-friendly and autonomous energy management system

- From 10. 8. (Tue) for 7 days, untact service vehicles will be placed on the GIST campus... Unmanned stores and healthcare services will be operated to collect empirical data such as power consumption and power usage patterns
- Expected development of GIST-KATECH mobility energy convergence technology research cooperation... Industry-Academia-Research-Government mobility energy technology exchange meeting scheduled for 11. 5. (Tue) at KATECH Gwangju Regional Headquarters



▲ GIST-KATECH jointly hosted unmanned autonomous driving technology for the development and demonstration of non-face-to-face service technology for unmanned stores and healthcare

The Gwangju Institute of Science and Technology (GIST, President Kichul Lim) announced that the Research Institute for Solar and Sustainable Energies (Director Sanghan Lee, School of Materials Science and Engineering professor) and the Materials Convergence Research Center of the Korea Automotive Technology Institute (KATECH) Gwangju Regional Headquarters (Director Hyeon-cheol Lee, concurrently a professor at the GIST Research Institute for Solar and Sustainable Energies) jointly operated an untact service\* utilizing unmanned shuttle platform technology on the GIST campus for seven days from Tuesday, October 8 to Monday, October 14.

The research team conducted a non-face-to-face experience of a store and healthcare based on an unmanned shuttle platform vehicle for about a week with about 200 members, including GIST students and researchers, to study the possibility of a non-face-to-face service of purpose-based mobility\*, a next-generation mobility technology.



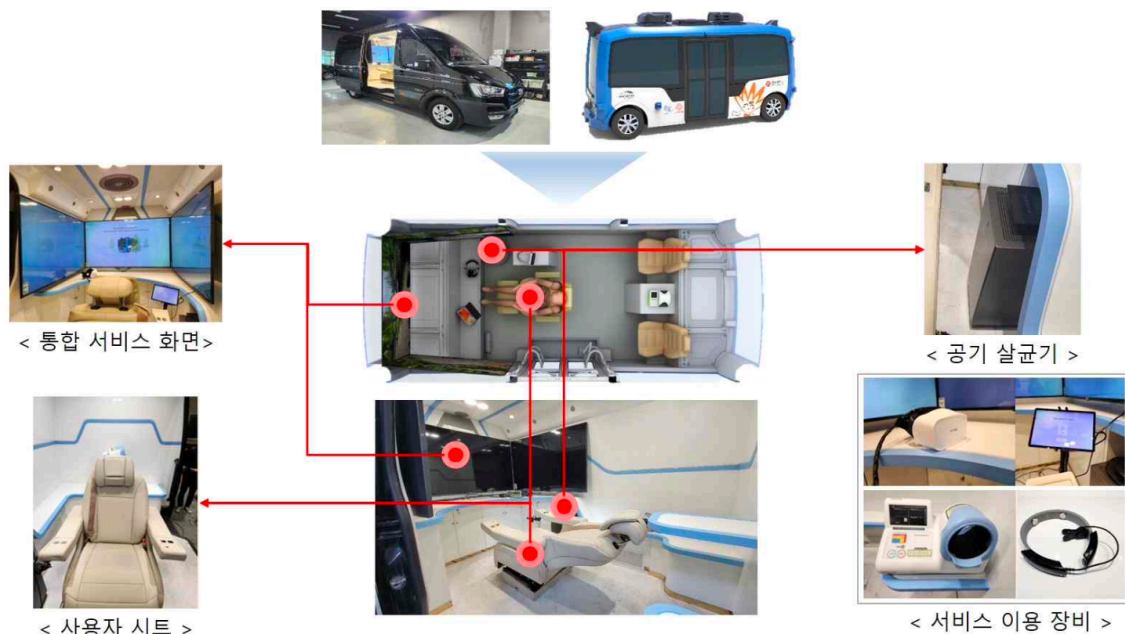


▲ GIST-KATECH jointly hosted an unmanned store and healthcare demonstration operation site for the development and verification of non-face-to-face service technology for unmanned autonomous driving technology

Based on empirical data, researchers will study the possibility of non-face-to-face services, and collect the amount of electricity required for the service and the electricity usage patterns during the pilot operation period, which will be used as important data to lay the foundation for future mobility-energy convergence projects.

\* untact service: A service provided non-face-to-face, operated in a way that minimizes physical contact between people.

\* purpose-based mobility: A mobility system designed for a specific purpose, providing free services such as healthcare and unmanned stores within mobility.



▲ Overview of the non-face-to-face healthcare service platform

In the operation of purpose-based mobility, the important factors are the power required for the service and energy efficiency. Therefore, battery management of mobility and efficient use of energy storage systems (ESS)\* are essential, and continuous electric energy supply is required for the autonomous driving system of next-generation mobility to operate for a long time.



▲ Photo of a non-face-to-face smart store service vehicle (left) and a power monitoring device installed inside the vehicle (right)

To this end, the GIST Research Institute for Solar and Sustainable Energies is planning a project to develop a high-efficiency battery system suitable for mobility and to demonstrate an external charging solution using solar energy in cooperation with KATECH.

\* energy storage system: A system that stores generated energy and makes it available for use when needed. It is mainly composed of battery-based storage devices and plays an important role in efficiently utilizing renewable energy such as solar power or electricity.

The Research Institute for Solar and Sustainable Energies is seeking ways to solve the energy source problem of purpose-based mobility by utilizing solar cell and energy storage system (ESS) technology to develop future purpose-based mobility with more eco-friendly and autonomous energy management systems.

The institute is developing a system that efficiently stores and manages energy produced through high-safety, large-capacity ESS technology that can produce energy while driving through ultra-light, high-performance next-generation solar cells that can be mounted on the exterior of a vehicle.

The Research Institute for Solar and Sustainable Energies Director Sanghan Lee said, "This project is even more anticipated as it is part of a joint research project led by KATECH Director Hyeon-cheol Lee as a part-time professor at the GIST Research Institute for Solar and Sustainable Energies. Based on close academic-research convergence, it is important to develop technologies that can efficiently utilize energy in future mobility, and the Next Generation Energy Research Institute plans to continue to discover various next-generation mobility energy businesses."

Meanwhile, the Mobility Energy Technology Exchange Meeting, jointly hosted by GIST Research Institute for Solar and Sustainable Energies, Energy Valley Technology Institute, and KATECH, for the advancement of mobility-energy linkage technology development, is scheduled to be held at KATECH Gwangju Regional Headquarters on Tuesday, November 5.