



Gwangju Institute of Science and Technology

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GIST develops connected platform technology based on next-generation vehicle communication (V2X)

- GIST (Gwangju Institute of Science and Technology, President Kiseon Kim) AI Graduate School (Dean JongWon Kim) is working with ETForce (CEO Yong-jae Lim), Kookmin University (Professor Gu-min Jung), and Ten Energy Soft (CEO Chun-seok Jeon) to develop V2X-based platform technology, which is the next-generation core element of self-driving car infrastructure.
- Vehicle-to-everything communication (V2X) is a technology that connects everything with a vehicle, enabling communication between various elements in the vehicle and road environment, and is considered a core technology for autonomous vehicles and next-generation intelligent transportation systems. It is mainly used to inform traffic conditions or recognize vehicles in front of it and to communicate with traffic infrastructure, such as traffic lights, speed-limiting sections, or to support nearby pedestrian information.
- This technology aims to research and develop connected platform technology based on vehicle-to-everything communication (V2X) that can respond to external environments such as bad weather. The first public demonstration and meeting were held on November 13, 2020.



- At the demonstration site, officials from four research teams, including GIST, Kookmin University, ETForce, and Ten Energy Soft, attended the demonstration and conducted technical demonstrations on related topics.
 - The main contents were ▲ Distributed XAI Response Data Concentrator (DCU) based on the white box from the GIST research team ▲ XAI-Converged Recognition by Integrating Vehicle-Infrastructure Sensors from the Kookmin University research team ▲ Hybrid-V2X communication platform that supports the AI-adaptive connected service from the ETForce research team ▲ Verification of bad weather driving scenarios carried out through HILS (Hardware-in-the-loop Simulation) interworking from the Ten Energy Soft research team.
- This automotive AI convergence project is an artificial intelligence-centered industrial convergence complex project R&D project led by the Ministry of Science and ICT and the Information and Communication Industry Promotion Agency for about 5 years (2020.5.1. ~ 2024.12.31). It has supported and plans to conduct research and development on Hybrid-V2X communication platform, high-precision positioning technology, distributed XAI-DCU prototype, and HILS (Hardware-in-the-Loop Simulation) interlocking technology research and development for driving simulators.
 - AI Graduate School Dean JongWon Kim said, "Automotive AI convergence technology is expected to greatly contribute to strengthening future mobility capabilities, such as improving global competitiveness through DNA (Data-Networking-AI) research for automotive artificial intelligence and accident prevention technology in bad weather, and improving the stability of autonomous vehicles."
- The research team plans to conduct public demonstrations periodically during the research period starting with the first public demonstration this year. In the future, the demonstration will be conducted in connection with the demonstration complex and data center that will be built in the Gwangju artificial intelligence-centered industrial convergence complex.

