Gwangju City, Republic of Korea

CLIENT
Gwangju City (Nam-gu District)

CHALLENGE
- Transportation/traffic regarded as the biggest problem in the city, according to citizen survey.
- Increasing complaints about traffic safety and the lack of repair

SOLUTION
- RiaaS road analyzer installed in buses, cabs, garbage collectors, public service vehicles (70 units)

RESULT
- Ongoing project (~May 2023)
- Road maintenance cost expected to decrease

Gwangju is South Korea's sixth-largest metropolis and a designated metropolitan city. With artificial intelligence at the core of the 4th Industrial Revolution, Gwangju is leading the way through the "AI Hub City Gwangju Project," and taking the lead in creating the "AI Four Major Powers in Korea."

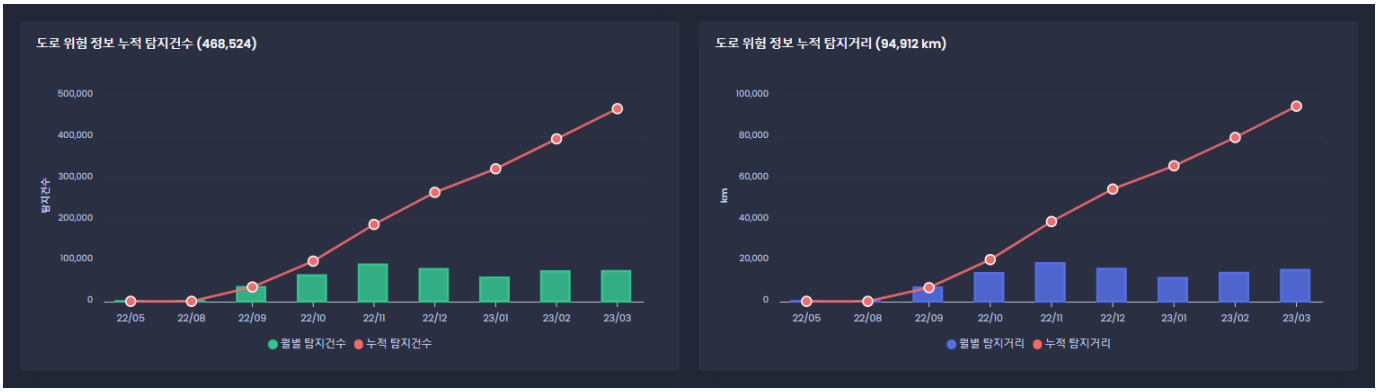
Nam-gu District in Gwangju city is an area where National Route 1 passes and serves as a traffic gateway in the region.

CHALLENGES

According to a citizen survey conducted by Nam-gu District's smart city planning research team in 2021, traffic and transportation sector was the most urgent problem(43.9%), with 17.4% of respondents pointing out the lack of safety in road maintenance.

As of 2021, the number of potholes in Gwangju City was 24,902 (47% increase from 16,941 in 2020) and the number of related accidents was 1,315 (458% increase from 287 in 2020).

As a result, Nam-gu District wanted a systematic road management system to respond to increasing number of road hazards and relevant complaints.



A screenshot from Gwangju City's monitoring system showing monthly and accumulated number of hazard (left) and distance of scanned road (right).

SOLUTION

Nam-gu District has implemented RiaaS by installing AI Road Analyzer(ARA) in 50 vehicles: 7 government official cars, 10 taxis, 21 buses, and 12 garbage trucks. Collected data is then sent to different divisions and team, such as waste management team and traffic safety facilities team, that monitor the road hazard and respond accordingly. In particular, the district has customized the system to alert the road maintenance personnel when detected road hazards have potential to harm the citizens. Moreover, it also detects other components that may deteriorate the quality of urban environment, such as illegally installed banners and other facilities that require regular monitoring.

The municipal government also plans to involve the local community and other stakeholders in the process to accurately identify the problems on the road and customize the RiaaS solution to cater to these needs. Citizens will be surveyed before and after the implementation of RiaaS to assess and analyze the impact of RiaaS on improving the road safety.

Monitoring system shows number of hazards and distance of scanned road by types of road. From left to right: Expressway, national route, municipal road, and local road.

RESULTS

Nam-gu District was able to use metadata and automated classification system to establish a rapid response system for relevant teams in the municipal government. RiaaS also helped the district effectively reduce time and cost of handling road hazard related complaints and accidents.

The obtained road hazard information will be used to predict road maintenance issues in the future as well as to identify priorities in road improvement through big data analytics. For example, the district can proactively set apart necessary budget for road pavement based on the collected data. Traffic safety division will identify areas where jaywalking occurs most constantly and install signs in those areas to promote crosswalk safety.

> **"The frequency of road patrols has decreased, work processing has become easier, and civil complaints have been reduced due to preemptive detection and maintenance of road hazards."**
>
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