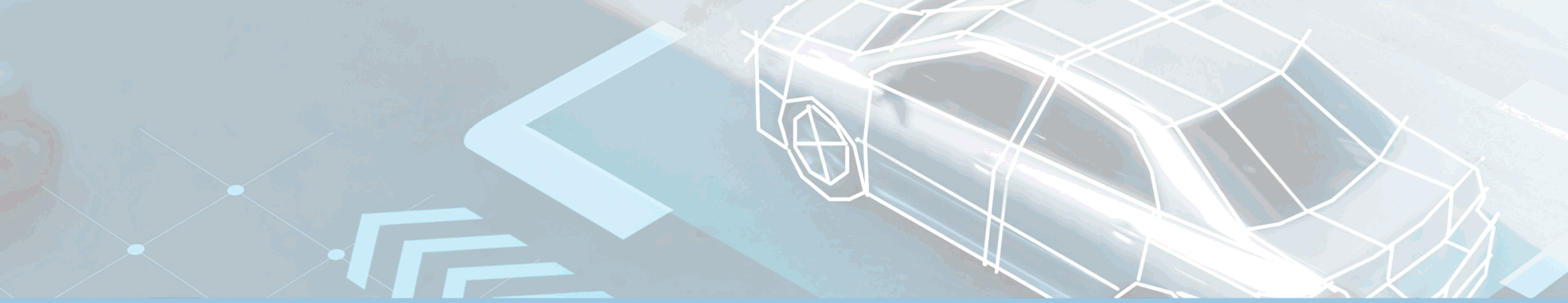

도로위의 트램 TRT,
신교통수단 활성화 방안

중국 이빈시 ART 시스템 사례 고찰 및 국내 도입을 위한 과제

이창운*

ART System in Yibin City of China and Tasks for its Introduction in Korea

Changwoon Lee*

Key Words : Autonomous rail rapid transit(ART 시스템), Yibin city in China(중국 이빈시), ART operation(ART 운영), Three-car articulated bus(3량 굴절버스), Street tram(노면트램)

ABSTRACT

Technological advancements are accelerating the emergence of new forms of integrated transportation systems by breaking down the boundaries between existing transportation areas such as automobiles, railways, and aviation. In Europe, rails have been installed on roads for a long time to increase transportation efficiency by allowing regular vehicles and trams to coexist. Similarly, Yibin City in China has shown an innovative case of effectively solving serious urban traffic congestion by building a three-car articulated bus vehicle that functions as a street tram like an urban railway network. These cases suggest new alternatives for overcoming the limitations of existing transportation systems and building a sustainable urban transportation system, and suggest important directions for the development of future urban transportation.

* 인프라경제연구원/원장
E-mail : cleenaver@naver.com

대전시 TRT 도입 사례

서정미* · 이정배** · 장용석**

TRT Application Case in Daejeon City

Jeongmi Seo*, Jeongbae Lee**, Yongseok Jang**

Key Words : Daejeon metropolitan city(대전광역시), Urban efficiency(도시 효율성), Modal split(수송 분담률), Punctuality(정시성), Eco-friendly transportation system(친환경 교통 체계), Trackless rapid tram(무궤도 트램), Pilot project(시범사업), Urban railway network development plan(도시 철도망 구축 계획), Institutional constraints(제도적 제약)

ABSTRACT

Daejeon Metropolitan City is promoting the construction of subway lines 2, 3, 4, and 5 to alleviate traffic congestion and other inconveniences faced by its citizens due to continuous growth and increasing traffic volume. However, the Daejeon Subway Line 2 has experienced significant delays, taking 28 years from the initial plan to commencement due to budgetary issues and other factors, hindering its prompt implementation.

In response to this situation, this study analyzes cases of introducing new transportation systems that combine the advantages of both railways and roads. These systems feature connected vehicles (3-5 cars) capable of transporting large numbers of passengers, similar to subways or trams, while operating on roads and allowing passengers to reach various destinations without transfers.

Furthermore, Daejeon plans to resolve citizen inconvenience in the shortest possible time by introducing a new transportation system that integrates the benefits of both rail and road, yet requires approximately one-third of the construction cost of a conventional railway and can be operational within a year. This new system is expected to offer efficiency, safety, and speed.

By sharing Daejeon's case of adopting this new transportation, this study aims to contribute to the further advancement of urban and metropolitan transportation systems in South Korea.

* 대전광역시청 도시철도계획팀/팀장
** 대전광역시청 도시철도계획팀/주무관
E-mail : ysjang17@korea.kr

도로 위의 트램(TRT), 신교통수단 활성화 방안

김용원* · 최훈**

Tram on the Road(TRT), Revitalization Way for New Transportation

Yongwon Kim*, Hoon Choi**

Key Words : TRT, Tram on the road(도로 위의 트램), Minimum radius of rotation(최소회전반경), Power distributed Equation(동력분산식), Two-door type(양문형), Two-way driving(양방향 운전), Priority traffic signal(우선신호), Mass transportation(대량 수송), Eco-friendly(친환경)

ABSTRACT

This paper discusses a new transportation system that operates on both general and dedicated roads, addressing the shortcomings of traditional railroads, such as subways and trains, which are limited to predetermined routes. By incorporating the advantages of mass transportation, such as safety, punctuality, and high passenger capacity, this system introduces the flexibility of road selection, enabling route diversions to surrounding areas and mitigating complaints from nearby residents. Unlike underground subway systems that pose environmental challenges, including fire hazards and poor air quality, this system operates above ground, offering a cleaner and safer alternative. Additionally, its cost-efficient construction—approximately one-third the cost of a tram—promotes rapid development, making it a promising solution for urban transportation needs.

* 중부대학교/교수
** 미래모빌리티/부장
E-mail : iys00370@naver.com

신교통 수단 도입을 위한 한국 안전기준 검토 및 개선 방안 연구

김규현*

Study on Review And Improvement of Korean Safety Standards for Introduction of New Transportation

Kyuhyun Kim*

Key Words : New transportation(신교통수단), Trackless rapid transit(TRT), Railway system(철도 시스템), Bus system (버스 시스템), Connected vehicle structure(연결 차량 구조), KMVSS(국내 자동차 안전기준), Two way driving(양방향 운전), Standard application plan(기준 적용 방안)

ABSTRACT

The rapid development of mobility technology is breaking down the boundaries between automobile, railway, and aviation transportation systems, and is heightening social interest and expectations as innovative new transportation methods are being developed that combine the core strengths of each transportation method. These new transportation methods have the potential to overcome the limitations of existing systems and provide more efficient and eco-friendly mobility, and are expected to become the core of future transportation.

However, the current system is tailored to the unique technical characteristics and operating environment of each transportation method that has been developed over a long period of time. Therefore, there is concern that an institutional gap may arise as a system that sufficiently reflects the unique characteristics and operating principles of newly emerging new transportation methods has not been established.

Therefore, this study aims to identify the applied functions and safety of new transportation systems that apply the strengths of each transportation system, such as automobile, railway, and aviation, and to suggest a plan to establish a system that can verify safety.

* 한국자동차모빌리티안전학회 부설연구소/소장

E-mail : kncap011@naver.com