**Project Report *A Framework of Autonomous Driving Simulator***

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# Abstract

Intelligent Transportation Systems (ITS) represent a pivotal integration of information technology and communication systems into the transportation framework, aiming to streamline traffic management, enhance road safety, and elevate the overall travel experience. Within the urban fabric, ITS is instrumental in addressing congestion, reducing environmental impact through optimized traffic flow, and bolstering the efficiency of public transport systems like Dublin Bus. This amalgamation of advanced technologies and transportation infrastructure paves the way for a more sustainable, safer, and smarter urban mobility landscape, reflecting a commitment to innovation and progressive urban planning.

In this study we will be reviewing the history of the Dublin Bus of incorporating evolving technologies into their system for the delivery of the promised conveniency, efficiency, and cost reduction. It will also expand the scope to international grade with comparison to other systems worldwide, and the quick growing new technologies such as AI, UAV, and NLP. Some suggestions will also be provided for the Dublin Bus in terms of the strategies of coupling with the current considerations and future challenges.

*Keywords*: ITS (Intelligent transportation system), AVLC (Automatic Vehicle Location and Control), Transportation, Challenges, Artificial Intelligence (AI), Machine Learning (ML), Route Control, Punctuality, Reliability

# Introduction

# Literature Review

# Overview of Dublin Bus ITS Implementation

## Electronic Ticket Machines (ETM)

## Integrated Ticketing System

# Challenges and Benefits

# Comparison with International Standards

# Case Studies and Examples

# Future Directions and Recommendations

# Challenges and Considerations

# Recommendations for AI and ML Integration

# Conclusion

# References

# Chart 1. PRISMA chart of research resources

Eligibility

Excluded due to no/low relevancy of creditability  
(n = 2 )

Full-text articles excluded, with reasons  
(n = 0 )

Partial assessed for eligibility  
(n = 42 )

Full-text articles assessed for eligibility  
(n = 0 )

Additional records identified through other sources  
(n = 0 )

Records identified through database searching  
(n = 103 )

Included

Identification

Screening

Records after duplicates removed  
(n = 102 )

Studies included in qualitative synthesis  
(n = 42 )

Studies included in quantitative synthesis (meta-analysis)  
(n =0 )

Records screened  
(n = 100 )