

# IOT Based Automated Toll Collection System using NodeMcu and Blynk App

Ritika Adam, Kunal Pawar, Ayush Sarande, Mrs M. M. Sonkhaskar

Dept. of E&TC and Engineering

Smt. Kashibai Navale College of Engineering, Pune, Maharashtra, India

**Abstract:** India has to be digitalized in every manner imaginable given its continuous development and economic expansion. To lessen the line at the toll plaza and the amount of staff needed, the toll collecting system in India has to be digitalized. In this project, the RFID-based Automated Toll Collection System is used to reduce traffic congestion and guarantee system transparency. With the help of the suggested system, traffic jams on toll roads, bridges, and tunnels might be eliminated without the need of cash or the requirement that cars stop. This tactic is based on an electronic toll collecting system that utilises radio frequency identification (RFID) technology to identify a vehicle specifically employed for toll collection. The proposed RFID system uses tags that are fastened to the automobiles' digital licence plates, giving RFID readers access to the data contained on the tags. It is possible to reduce the need for vehicle owners and toll collection companies to physically issue tickets and collect tolls using this method. Vehicle owners and the toll authority may easily exchange information about toll payments. As a result, toll payment transparency may be ensured with minimal manual labour and human error. It will be easier to develop a smart transportation system as a consequence.

**Keywords:** Automatic toll collection, RFID, Embedded, Blynkapp

## REFERENCES

- [1]. P. Arokianathan, V. Dinesh, B. Elamaran, M. Veluchamy and S. Sivakumar, "Automated toll booth and theft detection system," 2017 IEEE Technological Innovations in ICT for Agriculture and Rural Development (TIAR), 2017, pp. 84-88, doi: 10.1109/TIAR.2017.8273691.
- [2]. S. Ahmed, T. M. Tan, A. M. Mondol, Z. Alam, N. Nawal and J. Uddin, "Automated Toll Collection System Based on RFID Sensor," 2019 International Carnahan Conference on Security Technology (ICCST), 2019, pp. 1-3, doi: 10.1109/CCST.2019.8888429.
- [3]. C. Bari, U. Gupta, S. Chandra, C. Antoniou and A. Dhamaniya, "Examining Effect of Electronic Toll Collection (ETC) System on Queue Delay Using Microsimulation Approach at Toll Plaza -A Case Study of Ghoti Toll Plaza, India," 2021 7th International Conference on Models and Technologies for Intelligent Transportation Systems (MT-ITS), 2021, pp. 1-6, doi: 10.1109/MT-ITS49943.2021.9529325.
- [4]. Rajiv Israni, Damini Tichkule, Bhavna Gopchandani, "Automatic Toll Collection System (ATCS)," JCSE International Journal of Computer Sciences and Engineering, Vol.-7, Special Issue-12, May 2019, E-ISSN: 2347-2693,
- [5]. Abdulla R, "A conceptual study of long-range active RFID system for reliable data communication", In Frontiers of Communications, Networks and Applications (ICFCNA 2014-Malaysia), International Conference on IET, 2014, pp. 1-6.
- [6]. Malvik Patel, Bharavi Joshi, Kajal Bhagat and Hetakshi Desai and Jekishan K. Parmar, "IOT Based Toll Collection System Using Image Processing," International Journal of Computer Engineering & Technology, 9(3), 2018, pp. 132- 139.
- [7]. Kavyashree M, Mamatha M, Manasa N M, Vidhyashree H E and Nagashree R N. "RFID based Toll Collection System," International Journal of Engineering Research & Technology (IJERT), Volume 8 Issue 11 2020 Conference Proceedings

- [8]. Deepashree K. Mehendale and Reshma S. Masurekar, "To study the implications of Electronic Toll Collection System using RFID Technology," International Research Journal of Multidisciplinary Studies (IRJMS), Vol. 1, Issue 5
- [9]. J. Krishnamurthy, N. Mohan and R. Hegde, "Automation of Toll Gate and Vehicle Tracking," 2008 International Conference on Computer Science and Information Technology, Singapore, 2008, pp. 705-708, doi: 10.1109/ICCSIT.2008.148.
- [10]. Sumathi S M, Nikhitha Kale M, Manasa R, Jithesh A, Jithesh A, Megha D. Hegde, 0, Automatic Toll Collection System using RFID, International Journal of Engineering Research & Technology (IJERT), Vol 06, Issue 15,2018
- [11]. P. Hills and P. T. Blythe, "The automation of toll-collection and road-use pricing systems," Second International Conference on Road Traffic Monitoring, 1989., London, UK, 1989, pp. 118-1