(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :16/08/2023

(21) Application No.202341054747 A

(43) Publication Date : 01/09/2023

(54) Title of the invention : IoT–based AI system for analyzing the impact of reduced speed limits on urban highway

(51) International classification : G08G0001010000, G08G0001096700, H04L0047120000, E01C0001000000, G08G0001052000
 (86) International Application No :PCT// /
    Filing Date :01/01/1900
 (87) International Publication No : NA
 (61) Patent of Addition to Application Number :NA
    Filing Date :NA
 (62) Divisional to Application Number :NA
    Filing Date :NA
	(71)**Name of Applicant :**
	  1)**Dr.D.Prabakar, Karpagam College of Engineering**
	    Address of Applicant :Professor, Dept of Computer Science and Engineering, Karpagam College of Engineering, Myleripalayam, Othakkalmandapam, Coimbatore- 641032 Tamilnadu, India Coimbatore ---------- - ----------
	  2)**Dr.CH.Balakrishna, Guru Nanak Institute of Technology**
	  3)**Dr V Anandkumar, Sri Krishna College of Engineering and Technology**
	  4)**Dr B Santhosh Kumar, Guru Nanak Institute of Technology**
	  5)**Mr.Yesuraja D, Guru Nanak Institute of Technology**
	  6)**Ms.Hameetha Begum, Muscat College**
	  7)**Mr.Dasari Siva Krishna, GMR Institute of Technology**
	  8)**Ms.Palagati Anusha,Guru Nanak Institute of Technology**
	  9)**Dr.P.Mukilan, Bule Hora University**
	  10)**Mr.Henok Gebremedihen Teklu, Bule Hora University**
	Name of Applicant : NA
	Address of Applicant : NA
	(72)**Name of Inventor :**
	  1)**Dr.D.Prabakar, Karpagam College of Engineering**
	Address of Applicant :Professor, Dept of Computer Science and Engineering, Karpagam College of Engineering, Myleripalayam, Othakkalmandapam, Coimbatore- 641032 Tamilnadu, India Coimbatore ---------- - ----------
	  2)**Dr.CH.Balakrishna, Guru Nanak Institute of Technology**
	Address of Applicant :Associate Professor, Dept of Computer Science & Engineering, Guru Nanak Institute of Technology, Ibrahimpatnam, Ranga Reddy (Dist)-501506 Telangana, India Ibrahimpatnam ---------- ----------
	  3)**Dr V Anandkumar, Sri Krishna College of Engineering and Technology**
	Address of Applicant :Professor, Dept of Information Technology, Sri Krishna College of Engineering and Technology, Sugunapuram, Coimbatore-641008 Tamil Nadu, India Coimbatore ---------- ----------
	  4)**Dr B Santhosh Kumar, Guru Nanak Institute of Technology**
	Address of Applicant :Professor & Head, Dept of Computer Science & Engineering, Guru Nanak Institute of Technology, Ibrahimpatnam, Ranga Reddy (Dist) Telangana-501506, India Ibrahimpatnam ---------- ----------
	  5)**Mr.Yesuraja D, Guru Nanak Institute of Technology**
	Address of Applicant :Assistant Professor, Dept of Electrical and Electronics Engineering, Guru Nanak Institute of Technology, Ibrahimpatnam, Ranga Reddy (Dist)-501506 Telangana, India Ibrahimpatnam ---------- -- ----------
	  6)**Ms.Hameetha Begum, Muscat College**
	Address of Applicant :Assistant Professor, Department of Computing, Muscat College, PO Box 2910, Ruwi, PC 112, Muscat, Sultanate of Oman ---------- ----------
	  7)**Mr.Dasari Siva Krishna, GMR Institute of Technology**
	Address of Applicant :Sr. Assistant Professor, Dept of Computer Science and Engineering, GMR Institute of Technology, GMR Nagar, Rajam, Vizianagaram, 532127 Andhra Pradesh, India Rajam ---------- ----------
	  8)**Ms.Palagati Anusha,Guru Nanak Institute of Technology**
	Address of Applicant :Assistant Professor, Dept of Computer Science & Engineering, Guru Nanak Institute of Technology, Ibrahimpatnam, Ranga Reddy (Dist)-501506 Telangana, India Ibrahimpatnam ---------- ----------
	  9)**Dr.P.Mukilan, Bule Hora University**
	Address of Applicant :Associate Professor, Department of Electrical and Computer Engineering, Bule Hora University, College of Engineering and Technology, P.O.Box No:144, Bule Hora, Ethiopia ---------- ----------
	  10)**Mr.Henok Gebremedihen Teklu, Bule Hora University**
	Address of Applicant :Head of Department, Department of Electrical and Computer Engineering, College of Engineering and Technology, Bule Hora University P.O.Box No:144, Bule Hora, Ethiopia ---------- ----------

(57) Abstract :

Congestion and the potential for accidents are particularly bad at freeway bottlenecks. A variable speed limit can help reduce traffic and make roads safer in these situations. Existing variable speed restriction guidelines in the associated literature tend to be narrowly focused and rarely provide hard and fast numerical limits. The purpose of this research was to develop a variable speed limit system appropriate for motorway bottleneck locations. The criteria for freeways were established, and variable speed restriction rules were devised for use in various traffic and weather conditions. Then, two bottleneck scenarios—a tunnel area and a merging area—were constructed in the VISSIM microscopic traffic simulation program and put to the test. Evidence from these two cases reveals that, at traffic flow ranges appropriate speed limitations can successfully reduce roadway delays and increase the operating efficiency of bottleneck zones. The efficiency of freeways is substantially hampered by unreasonable speed limits during periods of low volume. When congestion has already established due to heavy traffic, lowering the speed limit won't do much to alleviate the situation. These findings on variable speed limit systems for motorway bottlenecks can serve as a theoretical reference for their design and implementation. This helps in some little way toward long-term traffic stability.

No. of Pages : 11 No. of Claims : 2