



**GUJARAT TECHNOLOGICAL UNIVERSITY
(GTU)
INNOVATION COUNCIL (GIC)
Patent Search & Analysis Report
(PSAR)**



Date of Submission : 19/10/2020

Dear **Dave Maunish Manishbhai**,

Studied Patent Number for generation of PSAR : **20BE7_170130107020_4**

PART 1: PATENT SEARCH DATABASE USED

1. Patent Search Database used	:	Google Patents
Web link of database	:	https://patents.google.com/
2. Keywords Used for Search	:	traffic lights,preemption management system,physics
3. Search String Used	:	traffic lights management system using physics
4. Number of Results/Hits getting	:	10

PART 2: BASIC DATA OF PATENTED INVENTION /BIBLIOGRAPHIC DATA

5. Category/ Field of Invention	:	
6. Invention is Related to/Class of Invention	:	TRAFFIC CONTROL SYSTEMS
6 (a) : IPC class of the studied patent	:	G08G1/087
7. Title of Invention	:	Traffic light preemption management system
8. Patent No.	:	US9685080B2
9. Application Number	:	3/289,456
9 (a) : Web link of the studied patent	:	https://patents.google.com/patent/US9685080?oq=traffic+light+man agement+system
10. Date of Filing/Application (DD/MM/YYYY)	:	11/4/2011
11. Priority Date (DD/MM/YYYY)	:	
12. Publication/Journal Number	:	
13. Publication Date (DD/MM/YYYY)	:	
14. First Filled Country : Albania	:	

15. Also Published as

Sr.No	Country Where Filled	Application No./Patent No.
1		

16. Inventor/s Details.

Sr.No	Name of Inventor	Address/City/Country of Inventor
1	Giovanni Grieco	Rome(IT)
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3	Michelangelo La Placa	Rome(IT)
4	Riccardo Pizzutilo	Rome(IT)

17. Applicant/Assignee Details.

Sr.No	Name of Applicant/Assignee	Address/City/Country of Applicant
1	International Business Machines Corp	Armonk

18. Applicant for Patent is : Company

PART 3: TECHNICAL PART OF PATENTED INVENTION**19. Limitation of Prior Technology / Art**

Prior technology traffic lights only had a manual description of what should be current traffic lights based on the time. It had no intelligent system to optimize the network and reduce the amount of time required for vehicle to wait.

20. Specific Problem Solved / Objective of Invention

Objective of the invention is to reduce the amount of time required for the vehicle to wait on the intersection using the information from the vehicle route and using doppler effect .

21. Brief about Invention

A method and system for managing a set of traffic lights at an intersection, measuring the Doppler Effect of a signal emitted by a vehicle, where such Doppler Effect being a function of the vehicle movement with respect to said intersection, and deciding as a function of such measure a new state for each traffic light at the intersection so as to facilitate passage of the approaching vehicle.

22. Key learning Points

we can use physics to get information about the current situation of the vehicle.

If we have enough information about the vehicle route and current traffic situation at the intersection we can develop a optimal system across the whole city.

23. Summary of Invention

s provided a method for managing traffic lights comprising: receiving a route which is going to be taken by a vehicle, wherein the vehicle is equipped to emit a first signal having a predefined characteristic; identifying an intersection on the route, wherein means for sampling the signal emitted by said vehicle are arranged at the intersection; identifying a first traffic light controlling, at the intersection, the traffic going in the direction which will be followed by the vehicle when arriving at the intersection, according to the route; identifying a second traffic light controlling, at the intersection, the traffic going in another direction; receiving a signal sample corresponding to a sample of the first signal received by said sampling means; determining, from an analysis of the sampled signal, whether the vehicle is approaching; if the vehicle is approaching, instructing the second traffic light to change its state so as to block traffic and instructing the first traffic light to change its state so as to authorize traffic, so as to facilitate passage of the vehicle at the intersection.

24. Number of Claims : 10

25. Patent Status : Published Application

26. How much this invention is related with your IDP/UDP?

< 70 %

27. Do you have any idea to do anything around the said invention to improve it? (Give short note in not more than 500 words)

The problem with the invention is it required too much information to decide on the state of the lights which is not possible to implement. If we can develop a system which uses current situation at the intersection it will be really easy to implement.