

AUTOMOTIVE TRAFFIC INFORMATION SYSTEM (ATIS)

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Introduction:

Good and easy transportation is a key concept in any nation's exponential growth.

PROBLEM IDENTIFIED:

We generally encounter difficulties at traffic signals due to obstacles like heavy motor vehicles that are ahead of us blocking the visual contact from the traffic light. Or being unmindful of the traffic, cause delay in traffic flow. And sometimes, harsh weather condition gives rise to offensive driving.

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- Automotive Traffic Information System (ATIS)

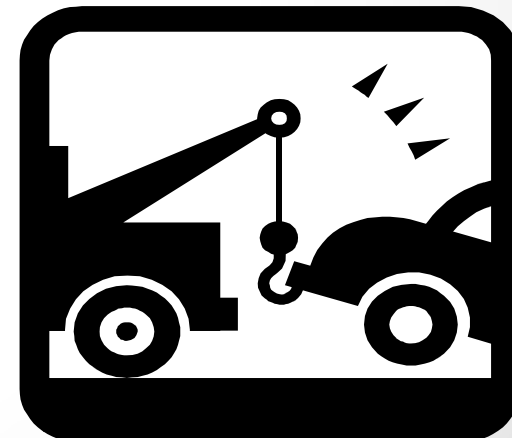


EXTENDED PROBLEMS:

- Accidents due to violation of traffic signal.
- Delay in traffic flow causes fuel loss.
- Pollution.

Violation of traffic rules:

- According to the police, 10 % of road fatalities on Delhi roads occur due to jumping of red lights by motorists. This year, as many as 6,420 motorists were prosecuted for jumping red lights at one intersection in Delhi.



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Fuel loss:

- Acc. to the survey, in Delhi, 0.37 million kilograms of CNG, 0.13 million litres of diesel and 0.41 million litres of petrol is wasted everyday due to idling of vehicles.
- Converting these figures into monetary terms, the total losses work out to be Rs.27.25 million per day and Rs.9944.5 million per annum.

SURVEY OF FUEL LOSS:

S.No.	VEHICLE TYPE	FUEL CONSUMPTION (in ml/hr)
1.	PETROL	
	➤ 4 WHEELER	767
	➤ 2 WHEELER	170
2.	DIESEL	833
3.	CNG	1827.5

Total Delay & Fuel Loss At Selected Signalized Intersections:

S.No.	Intersection	Daily Total Delay (hr.)	Daily Fuel Loss (Litres)	Daily Fuel Loss (Rs.)	Annual Fuel Loss (Million Rs.)
1.	KG+Ferozshah(CP)	1036.4	617.9	18,374.3	6.59
2.	ShaktiNagar	1296.1	756.9	21,664.1	7.78
3.	Rao Tularam Marg	1551.6	911.6	29,076.1	10.40
4.	DabriMor	1565.7	955.4	27,589.9	9.92
5.	Khanpur	1635.5	980.2	28,004.0	10.07
6.	Panchsheel	2054.0	1213.2	37,210.1	13.33
7.	Gazipur	2152.8	1183.9	36,733.3	13.17
8.	Pashchim Vihar	2294.9	1213.8	38,448.2	13.01
9.	Azadpur	2028.0	1510.1	39,672.6	14.31
10.	Shamlal College	2799.8	1541.5	43,213.2	15.59
11.	Ashram	4593.9	2718.7	86469.2	30.98
12.	Moolchand	5291.5	3289.2	100,186.9	35.87

Annual Fuel Loss Due To Idling of Vehicles

At Signalized Intersections

Intersection Volume	No. of Intersections	(in Million Litres)			Million Rs.
		CNG	Diesel	Petrol	
Low	69	8.4	1.4	7.6	504.1
Medium	118	17.7	5.0	18.1	1215.5
High	413	109.7	41.0	122.1	8224.9
Total	600	135.9	47.4	147.8	9944.6

POLLUTION

- Engine exhaust (diesel and gas) contains more than 40 hazardous air pollutants.
- Emissions from vehicles are producing around 70% of the air pollution.
- Slow speeds and idling vehicles produce, per trip, 4 to 8 times more pollutants and produce 800 grams of carbon dioxide per day just while idling.



Sources of Pollution:

Contribution of industrial, vehicular and domestic sources of pollution to the ambient air is as follows:

Source	1970-71	1980-81	1990-91 (projected)	2000-01
Industrial	56%	40%	29%	20%
Vehicular	23%	42%	64%	72%
Domestic	21%	18%	7%	8%

Pollution Produced due to idling of one vehicle for

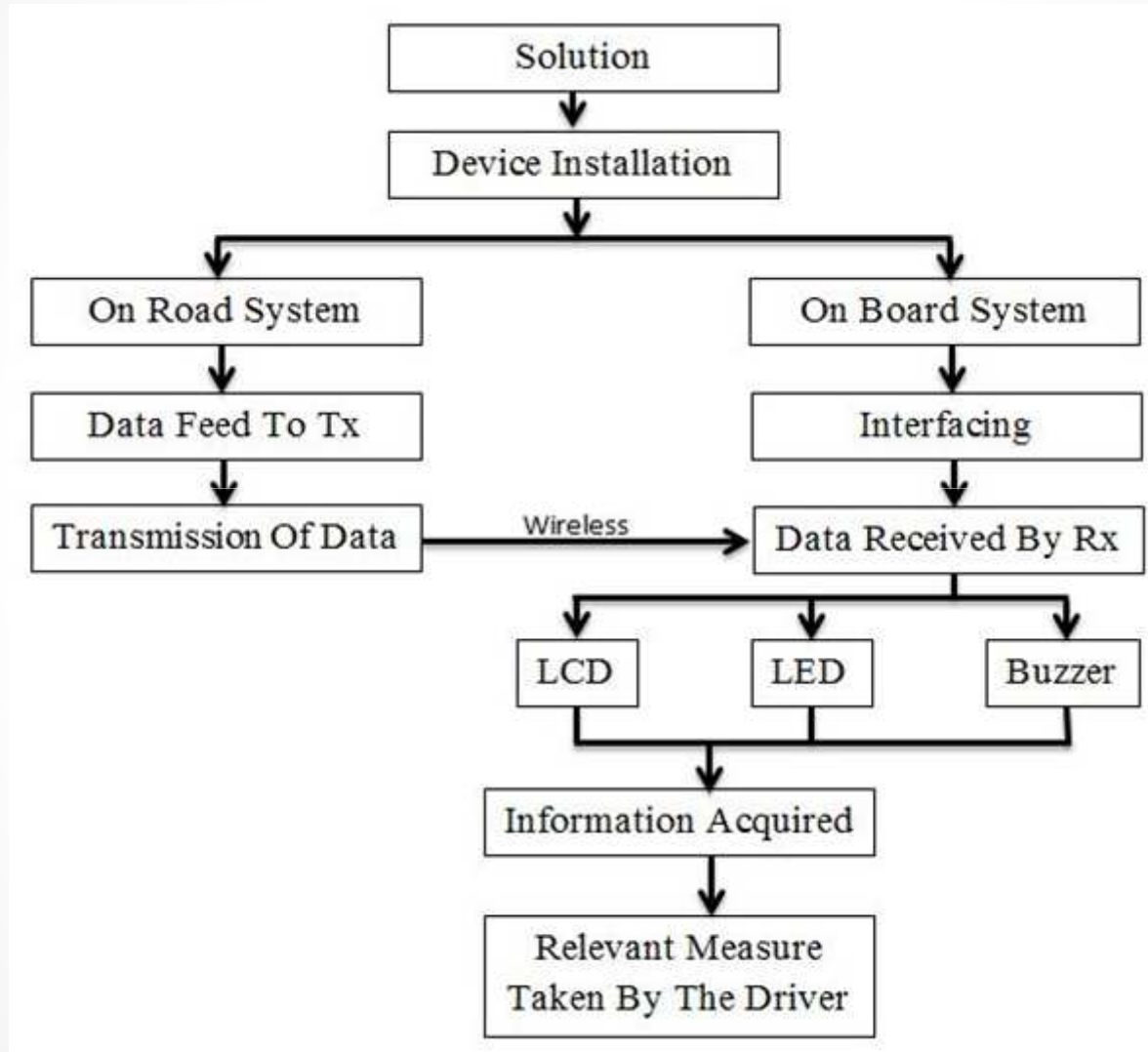
5 min (Calculated Annually)

Engine Size	Gasoline Burnt	Money Spent	CO ₂ Emitted
Light	37 litres	Rs.2590	99.66 Kgs
Heavy Engines	75.7 litres	Rs.5180	199.32 Kgs

OBJECTIVE OF ATIS:

- Intimates real- time traffic information.
- Alerts the chauffeur.

Work Flow Chart:



Methodology:

On Road System:

Consist of Data Source connected to Transmitter that transmits the information.

On Board System:

Consist of receiver, LCD display, LED's & buzzer.

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Result & Discussion:

It helps in overcoming the problems like:

- When a heavy motor vehicle is in front of us.
- Being unmindful at traffic signal.
- Harsh weather conditions.
- Fuel loss.
- Pollution.

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Conclusion & Future Scope:

ATIS is:

- Reliable source of traffic signal information.
- Independent.
- Flexible.
- Easy to access.

In Future ATIS will also be equipped with system which can auto cutoff the ignition line and be used for vigilance and accident assistance.

Thus installation of ATIS ensures free traffic flow, reduced pollution, increase in fuel economy, reduction in accident rate and thus contributing to the appraisal of the Indian economy.

Thank You...

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