

# NEED OF INCORPORATING INVANETS TO THE URBAN TRANSPORTATION SYSTEM OF INDIA

Laxmi Shankar Awasthi<sup>1</sup>, and Karuna Shankar Awasthi<sup>2</sup>

<sup>1,2</sup>Deptt. of Computer Science, Lucknow Public College of Professional Studies, Lucknow.

## Abstract

Transportation cyber physical systems such as automotive, aviation, and rail involve interactions between software controllers, communication networks, and physical devices [1][2]. These systems are very complex. There are a lot of ongoing research on InVANETs in Transportation but it is the matter of concern that there are no headway available to improvise the Urban Transportation System in India in order to reduce accidents. In this paper, we have discussed the analysis of current Urban Transportation System and how the Incorporation of InVANETs System will substantially help to mitigate the transportation systems safety, congestion, collision problems in India. This paper will explain the need of InVanets to the urban transportation system of India.

**KEYWORDS:** INVANETS, TCPS.

## 1. INTRODUCTION

The transportation networks are vulnerable to accidents, such as traffic jam. With the assistance of cyber world, the transportation systems have better ability to detect malfunctions than before. The integration of traditional transportation system together with the cyber systems gives the birth of Transportation Cyber-Physical Systems (TCPS). As the TCPS grows more and more complex, we need a reliability analysis framework for these systems, which will help to design and maintain the reliability of modern transportation systems.

Now a day's majority of commuters are experiencing heavy traffic congestion which results to delay. The resultant is because of the increase in population, and improving vehicular affordability to the masses.

This paper is therefore divided into five sections i.e.

- 1) Introduction
- 2) Related Work
- 3) Problems in Existing System

## 2. RELATED WORK

There are many programs run by the Indian Government to reduce the rate of accident per year. Indian Transportation System relies on the Urban Transport Framework. This Framework is divided into 4 areas of authorities:

- 1) Centre
- 2) State
- 3) Region
- 4) Local.

### 2.1. Framework of Transportation

Framework of urban transport on which the transportation is totally rely on it This framework of urban transport is divided into layers each and every layer is connected with one another first layer is consists of Ministry means the head and second layer consist of urban development department, urban development department ,state transport department and state police department and the second layer is answerable to first layer after that third layer which consists of urban transport, regional development authority ,SRTC regional transport office and this third layer is answerable to second layer after that fourth layer which is consist of

urban local body ,sub urban rail system and metro, and last is city traffic police and this layer is answerable to third layer and after the last layer which is fifth layer and it consist of intermediate transport that is rickshaw, taxis etc. ,BRTC , municipal service and this layer is answerable to fourth means all this layer is connected with one another .

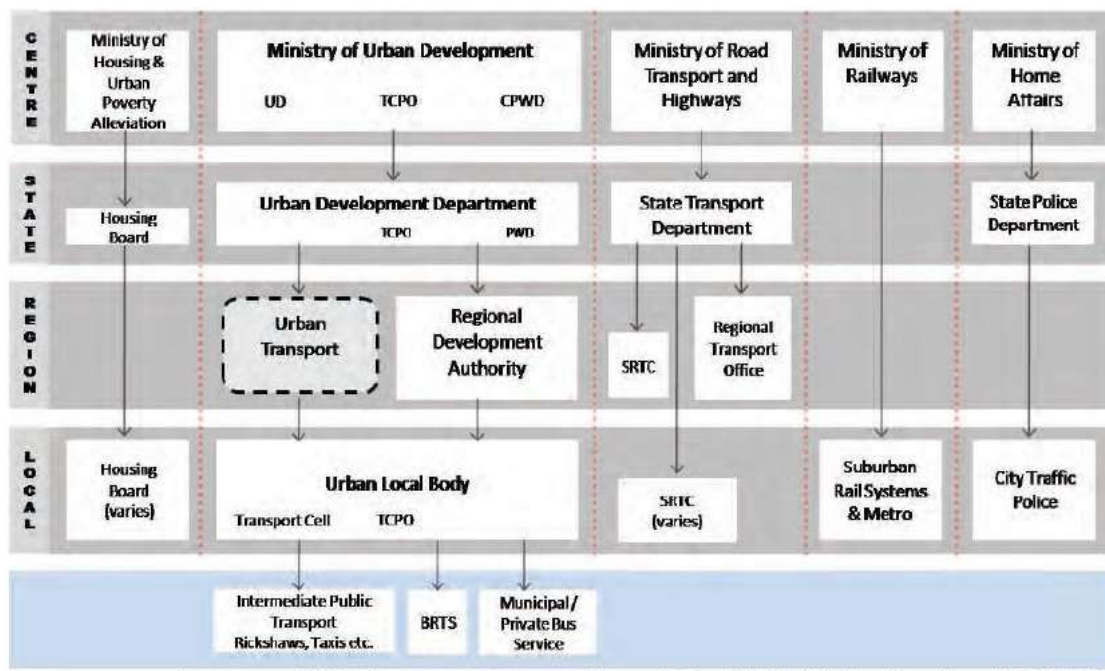


Figure 1. Urban Transport Framework of India [3]

**2.1. Program’s to minimize the Risk by Indian Govt.**

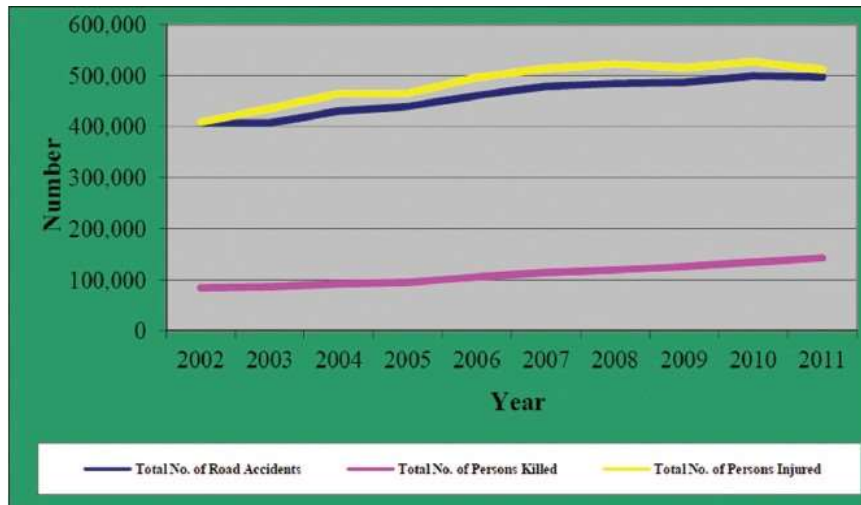
Road accidents are increasing day by day in 2011 Indian government started many programs for reducing the rate of road accident such that they start giving refresher training to the driver in unrecognized sector, different types of advertisement have been made, road safety equipment and pollution testing equipment’s have been launched for proper checking of vehicles for reducing the rate of road accidents Indian government started the inspection and maintenance centre at different locations this all have been established for reducing the rate of accidents in India.

Name of the Scheme/ Project/Programme		BE 2011-12	Exp. 2011-12	BE 2012-13	Exp. 2012-13*
1	Road Safety				
	(i) Refresher training to drivers in unorganised sector Human Resource Development including training	120.00	10.90	100.15	8.98
	(ii) Publicity measures and awareness campaigns	45.00	44.26	75.00	11.29
	(iii)National Highway Accident Relief Service Scheme	10.00	1.72	10.00	3.57
	(iv) Road Safety Equipment & Pollution Testing Equipment	50.00	21.01	30.00	1.58
2	National Database & Computer system, Data collection, research & development & transportation studies including total engineering solution	50.00	6.00	20.00	13.63
			0	40.00	1.45
3	Setting up of Inspection and Maintenance Centre	84.00	12.43	90.00	2.80
4	Strengthening public transport system including introduction of IT like Automatic Fare Collection based on GPS	40.00	19.86	30.00	0.40
5	Creation of National Road Safety Board	1.00	0	4.85	0
	Grand Total	400.00	116.18	400.00	43.70

Figure 2. Programs by India Govt. to minimize accident [3]

### 3. PROBLEMS IN EXISTING SYSTEM

The graph shows the number of accidents that have been taken place in recent past years in India between year 2002 to 2011. By the graph it is clearly visible that the road accidents in India are increasing day by day. In year 2002 the number of people who met with an accident are 1 lakh and in 2003 it became 1 lakh 29 thousand and in year 2004 - 2011 they are 5 lakh which is shown in the graph so now one of the major problems of Indian traffic system is road accidents.



**Figure 3. Number of road accidents persons killed and persons injured during 2002-2011[4]**

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