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PLAN OF SURABAYA TRANSPORTATION SYSTEM BY UTILIZING INTELLIGENT TRANSPORTATION

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Abstract: To promote economic growth in Surabaya, East Java Province in particular and in general need to be supported by an integrated transportion system between the port, land, air and the world so that the industry can accelerate the transportation path to increase economic growth in general. Economic growth could be increased if accompanied by the management of traffic management as well as an adequate infrastructure of the need to apply intelligent transportation systems that can combine several related aspects including economic, business, industrial, maritime, education, tourism, social and others. Based on the systematic problems that need to be done in-depth research for intelligent transport methodology with the decision relating to the public interest in the hope of increasing the overall economic growth and can be expected to interest the general public.

Keywords: Intelligent transportation, Economic growth

1. Introduction

Transport interpreted as an attempt to move, transport, or transfer an object from one place to another, which in other places such objects can be more helpful or useful for certain purposes. (Miro, 2012). Transport is defined as the transfer of goods and people from place of origin to point of destination (Nasution, 1996). From that sense it is understandable that transport is an activity that requires the work of roads and means of transport that is both public and private that could benefit both themselves and others.
As one of the basic infrastructure in the region, transport facilities and infrastructure is expected to be a driving force will be the development of an area. But there are times when the development of a city to be faster than the transport facilities. The fact that is causing transportation problems. Or can be down between the increase of the length of road infrastructure with the growing number of vehicles that are not balanced is what makes the root causes of transport. Thus causing the flow area of the city frequent traffic jams.
Surabaya city as a metropolitan city with more and more activities are activities in the city of Surabaya, including; Commerce, Industry, Education, Tourism, and Maritime observed all the activity that almost all activities related to the transportation process.

1.1 Problems

From the foregoing it appears some of the problems related to transportation in the city of Surabaya, among others:
1. The solid transportation in the city of Surabaya
2. The increasing number of vehicle growth
3. No berimbangnya growing number of road vehicles.
4. Less interesting your number of road users to use public transport.

1.2 Limitations of Variables
To make planning the transport system is more realized there should be restrictions on variables that are planned include:
Overcoming the transportation congestion in the city of Surabaya.
1   Identify activities rush hour in the city of Surabaya.
2   Optimizing the empowerment of public transport.
3   Ease of access to the latest information regarding transfortasi.
4.   Objectives Planning
      Intelligent transportation system planning with a view:
1   Give convenience to the people who will carry out activities in the city of Surabaya.
2   Provide solosi let no congestion transport.
3   To integrate information activities in the city of Surabaya in rush hours.
4.   Reader Review

2. Literature Review

Intelligent Transportation Systems (Intelligent trasportation System), better known by the acronym ITS. is an advanced technology in the field of electronics, informatics and telekominikasi to realize the infrastructure and means of transportation that is more informative, smooth, safe and comfortable. The technology is built to reduce the risk of traffic accidents. ITS application is composed of an information network system and modern navigation, traffic management systems, crash management systems, electronic transportation payment collection system, and a system for driving assistance. (O'Ryan M:2005). Towards the achievement of intelligent transport systems is necessary ancillary equipment including:

1. Advanced Traveller Information System is an information system that serves as a guide for motorists to obtain the effective way in his journey. The form of digital map-based geographic information system or in the present form of output monitoring GPS (Global Position System) which can be brought on the application of computers, notebooks to smartphones such as the Blackberry and mobile phones that use the Android operating system. (Kompasiana, 2013).

2. Incident Management System is an information system used in case of emergencies that may affect traffic conditions such as traffic accidents or natural disasters. In the event of a traffic accident, for example, based on input information from the field, it can be determined accident fatality rate, the number of victims and medical powers necessary, coordinate with the nearest hospital and if needed the support of other related agencies such as the fire department or power company. This information can also be an additional material coordination with nearby hospitals as the reference so it can be prepared adequate medical equipment. (Kompasiana, 2013).

3. Assistance for Safe Driving that ITS applications are installed in the vehicle as a tool for the driver to steer the vehicle safely. This is an early version of ITS applications and over the times, has experienced functional improvement. The shape of the sensor device connected to a computer device that has been installed in the vehicle itself. This sensor is automatic and will be a tool that can alert the driver in the event of potentially dangerous conditions such as:

Application of intelligent transport systems (intelligent transport system), hereinafter abbreviated as ITS, are features applied information technology in the transport sector, in this context is the ground transportation. In the early decades of the 2000s, has been recognized by policy makers in the transport sector that the traffic situation more complicated and complex would be very difficult if still rely on conventional management, then began to implement information technology applications with the primary objective to help control traffic .

If we trace the historical background to the ITS itself, the goal was originally designed to reduce the risk of traffic accidents. (Kompasiana, 2013).

In addition there are several studies related to this study include:

1. The use of GPS technology standard (Sandor Dornbush and Anupam Joshi, 2007) to choose a route that they believe will be the fastest but traffic congestion can significantly change the duration of the trip.

2. GPS-GSM as a vehicle tracking (Mohammad A. Al-Khedher, 2011) regarding the GPS-GSM system is integrated to track vehicles using the Google-Earth. With the GPS mechanism mounted on a moving vehicle to identify the current position, and the data is transferred to the receiving station by GSM with the parameters obtained.

3. The system of monitoring and control of urban traffic (James Marson Budiman, et al, 2012) regarding the monitoring and control system to integrate traffic information traffic density and traffic light damage through road location map displayed on the user side, and identify pathways occurrence traffic congestion.

4. GPS Tracking Path Simulation by replaying (G. Rajendra, et al, 2011), this research is to establish a database of GPS data that can be used and test the GPS application and the model approach: Collecting data from each path moving car once in the log file: log file repair : and play a few examples of multiple log files simultaneously after replacing some of the old values with the new values to simulate GPS tracking.

3. Research Method

In the process of designing intelligent transport systems in the city of Surabaya is necessary to process them by identifying the hours Sibut is often the case based on the observation of identification hours Sibut in Surabaya can diidentfikasi in accordance with the following table:

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Table Identification Rush Hour in Surabaya

No	Time	Use	Information
1	02.00 – 05.30	Tranding	Necessity (vegetables, fish)
2	06.00 – 07.00	Education	Kids Kindergarten - High School
3	07.00 – 08.30	Workers and Education	Education college student
4	08.30 – 15.30	Commerce, Industry, Tourism	Cargo truck production plant, agriculture etc.
5	15.30 – 19.00	Work return, Trading	
6	19.00 – 22.00	Shopping, Culinary, Entertainment	

By knowing the identification rush hour that occurs so that it can inform the condition of traffic flow that occurred in the city of Surabaya with management in an integrated way by the Department of Transportation (Transportation Agency) to convey information timbalik between DISHUB with road users and the parties associated with the use road traffic flows to its activities are carried out every day.
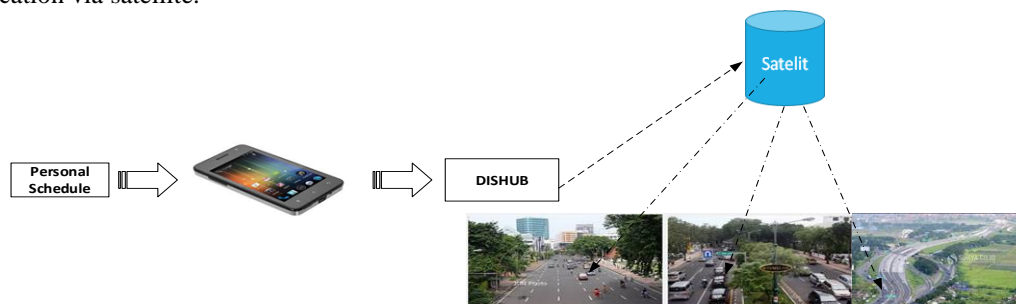
4. Discussion

System Design
The design of intelligent transport systems in the hope of getting the maximum output, by utilizing coordinate data and vehicle speed from the GPS Trackers. The device is attached to the city bus or public transport managed by the private sector of the data obtained will be processed into traffic data in real time. This data will be processed again into the traffic information is combined with maps geogle fire, then spread to the web-based internet media. With the hope is that obtained an information system that is easily understood by the public where traffic information is displayed in a visual format and can be accessed via the Internet.
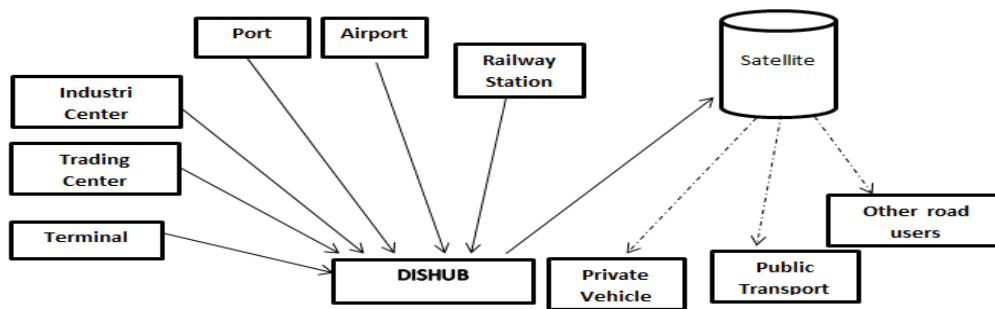
Picture Intelligent Transportation Plan

Planning intelligent transportation systems that describe how to integrate the rush hour or solid from each center activities including: Center industry, Terminal, Trade, Ports, Airports, Stations for mengimformasikan activities solid to DISHUB then from DISHUB processed and informed to the user who wants to use road transport by using means of telecommunication via satellite.

Picture the delivery plan or search for personal information from other users

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From the picture above illustrates the plan is to deliver information or search information from individual to determine the condition of the traffic flow eg road users with private vehicles can deliver traffic flow conditions occurring during or want to know the current condition of the road traffic that will be passed.

Analysis Research
From this research motorists either private vehicles or public transport should be prepared to monitor the activities of road conditions by:
1   Monitor the activity of the highway with up to date smart phonenya if would be traveling to perform its activities.
2   Inform about the condition of the flow of traffic when there is congestion in the public interest
3   By utilizing Smart phone immediately seek alternative paths when doing activities on the highway.

5. Conclusion
From these results will be obtained several conclusions including:
1   Can untangle traffic jams that occur at any time.
2   Can determine the level of traffic density and the growing amount of vehicles that are on the highway.
3   Can be directed to make use of public transport.
4   You can inform the traffic conditions at any time.

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