

Available Intelligent Transport Systems: An In-depth Overview

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Objective

- In-depth overview of ITS
- Identification of properties and capabilities of ITS



Outline

- Intelligent Transport Systems in general
- Possible ITS classifications
- Examples of ITS systems



ITS in general (1/2)

- Definition

Application of advanced sensor, computer electronics, and communication technologies and management strategies – in an integrated manner – in order to increase the safety and efficiency parameters of the transportation system.



ITS in general (2/2)

- ITS Assessment

- ❖ Development: Idea, Prototype, Fully developed
- ❖ Implementation: None, Implemented, Evaluated
- ❖ Evaluation: Simulation, Laboratory, Field tests

- Needs for ITS

- ❖ Improving Traffic Conditions
- ❖ Improving Road Safety
- ❖ Reducing Environmental Pollution



Possible ITS classification (1/6)

- Type of IT System

- ❖ Driver Assistance Systems (DAS)
- ❖ Advanced Driver Assistance Systems (ADAS)
- ❖ Advanced Traveller Information Systems (ATIS)
- ❖ Other



Possible ITS classification (2/6)

- Type of Installation
 - ❖ In-vehicle equipment
 - ❖ Nomadic systems
 - ❖ Both



Possible ITS classification (3/6)

- Type of traveller
 - ❖ Individual driver (commuter, tourist)
 - ❖ Professional driver (public transport, HGV etc)
 - ❖ Public transport user
 - ❖ Other (elderly etc)



Possible ITS classification (4/6)

- Driver need addressed
 - ❖ Information
 - ❖ Perception
 - ❖ Convenience
 - ❖ Monitoring
- Vehicle need addressed
 - ❖ General vehicle control
 - ❖ Collision avoidance
 - ❖ Monitoring



Possible ITS classification (5/6)

- Type of human-machine interface
 - ❖ Provision of plain information
 - ❖ Provision of advice
 - ❖ Provision of warning message
 - ❖ Communication with the environment
 - ❖ Capability of proceeding to a specific action



Possible ITS classification (6/6)

- Type of prospect use
 - ❖ Travel and Traffic Information
 - ❖ Traffic Management, Operations and Control
 - ❖ Public Transport
 - ❖ Automatic Debiting and Demand Management
 - ❖ Freight and Fleet Management
 - ❖ Driver Assistance and Cooperative Use



Examples of ITS (1/2)

- **ABS**

DAS, In-vehicle equipment, any type of driver, general vehicle control, capability of proceeding to a specific action, driver assistance and cooperative driving, Improving Road Safety

- **Constant headway maintenance**

ADAS, In-vehicle equipment, any type of driver, collision avoidance, capability of proceeding to a specific action, driver assistance and cooperative driving, Improving Road Safety



Examples of ITS (2/2)

- Information of waiting time at bus stop
ATIS, nomadic system, public transport user, -
,provision of plain information, public transport

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