

# Expectation for ITS Studies

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# Outline

- What is ITS?
- Why ITS is needed?
- Benefits of ITS?
- Research on ITS?
- Examples of Research
- What are expectation for ITS?
- What are expectation for ITS Studies?

# What is ITS?

- The application of advanced sensor, computer, electronics, and communications **technologies** and management **strategies** – in an **integrated** manner – providing traveler **information** - to increase the safety and efficiency of the surface transportation system.

US DOT Instructional Manual



# Benefits of ITS

- Better utilization of infrastructure



- Improved traffic flow



- Better service of public transport



- Low cost of freight transport



# Why ITS is needed?

- Safety
- Mobility
- Less Pollution
- Productivity
- Quality of Service (Comfort, convenience)

Present and Future

ITS = Intelligent Transport Solutions

# What are expectation for ITS?

- Vision of ITS comes from “thinking *outside* the box”
- Fundamental changes not incremental
- Some examples of “think out of the box”

Example#1 – If road pricing is the effective TDM, then how to implement this system effectively



Example#2 – If excessive or improper speed is really the cause of unsafe road, how to regulate traffic speed effectively?





# Example#3 – If commercial vehicles need more strict regulation for safety and security reasons, how to regulate them effectively?



CoPilot System



Commercial Vehicle Operations

# Paradigm shift

- *The way the infrastructure works, and the way we will use it:*
- {Impersonal, Manual, Local} ⇒ {Personalised, Automatic, Wide Area}



Also, Some management paradigm shift such as Public-Private Partnership

# ITS Studies

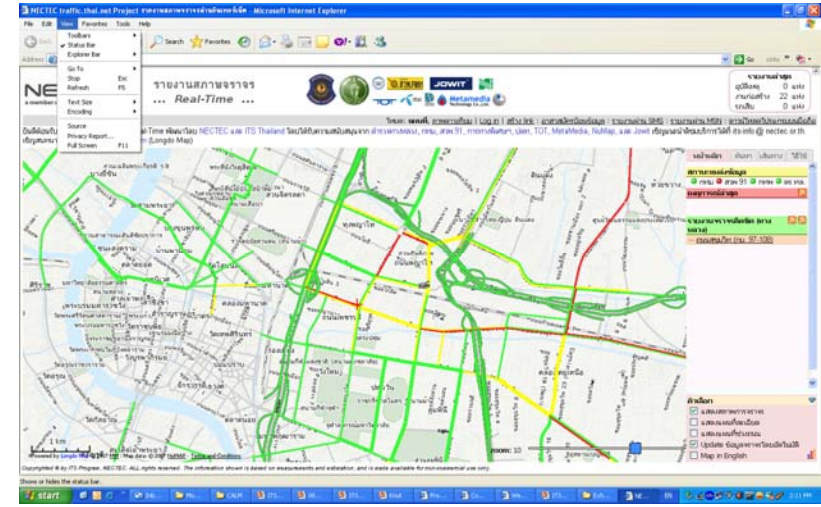
- Basic Research studies
- (Applied) Research and Development
- Feasibility studies
- Pilot (Project Demonstration) studies
- Evaluation Studies

# Examples of Research Studies

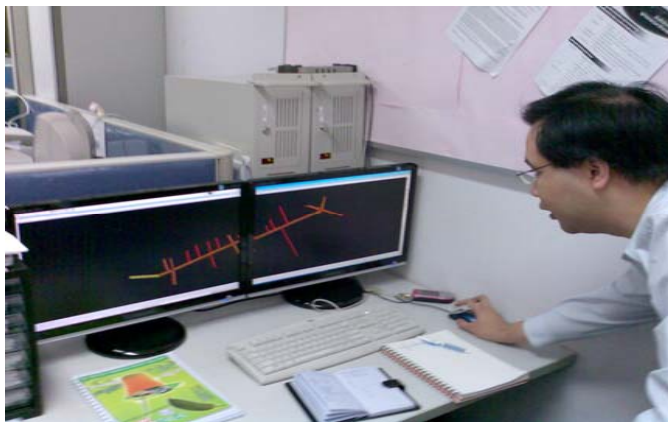
## 1. Enabling technologies



## 2. Travel behaviors

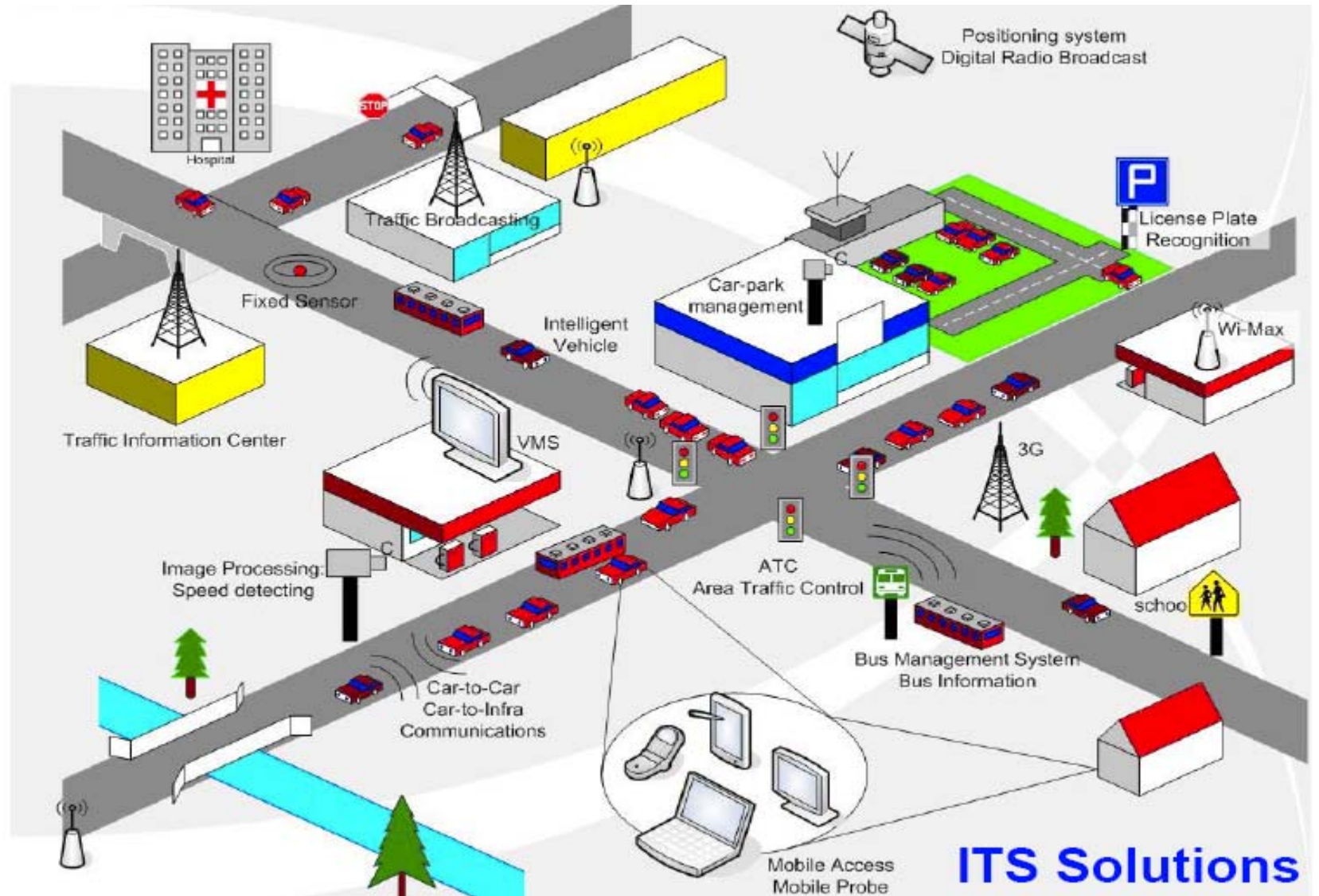


## 3. Traffic Modeling, Simulation



## 4. Evaluation

# NECTEC ITS Program



# NECTEC ITS Program

NECTEC Songkran Project รายงานสภาพจราจรช่วงสงกรานต์ - Windows Internet Explorer

NECTEC รายงานสภาพจราจร ... ช่วงสงกรานต์ ...

สถิติวัน (12 เม.ย. 50)  
อุบัติเหตุ 2 แห่ง  
งานพิเศษ 11 แห่ง  
รถคัน 3 แห่ง

รายงานสภาพจราจรล่าสุด  
บางกอก 304 โคน 109-132 ช่วง  
แยกปิ่นเกล้า-แยกสวนจันทรมาน  
นครราชสีมา)  
ถนนมิตรภาพ (กม. 207-232 ช่วงล่าง  
ระดมศิลป์ - เซลล์เม. โขกพระ)  
ถนนมิตรภาพ (กม. 232-247 ช่วง  
โคกกระดังงา-สามัคคีราษฎร์)  
ถนนมิตรภาพ (กม. 258-269 ช่วงสี่  
แยกถนนวิเศษ-แยกสี่กั๊ก-วังทอง  
หลวง-โพธิ์)  
ถนนมิตรภาพ (กม. 182-195 ช่วงล่าง  
ระดมศิลป์-สามัคคี-แยกหนองแขวง  
คลอง)  
ถนนมิตรภาพ (กม. 195-207 ช่วงสาม  
แยกหนองแขวง-คลอง-ระดมศิลป์  
สี่)

ตัวเลือก  
 แสดงภาพจราจร  
 แสดงแผนที่เคลื่อนไหว  
 Map in English

MapServer - Mozilla Firefox

MapServer

หน่วยบริการ ทับทวน

2007-04-10 03:18:19 Camera: HighwayTubkwang

2007-04-10 03:23:19 Camera: HighwayTubkwang

03:18:19

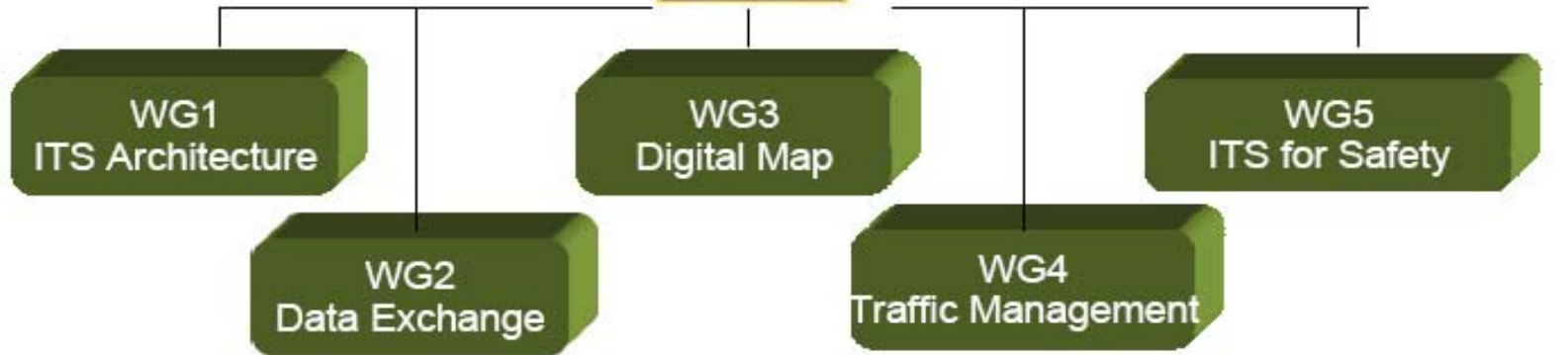
2007-04-10 03:20:19 Camera: HighwayTubkwang

03:18:19

03:48:19

สถิติล่าสุดเมื่อ 2007-04-13 03:55:04 ความเร็วรถ 7.41 กม./ชม. จำนวนรถที่จุด 4 คัน นาที

# ITS Thailand (academic)



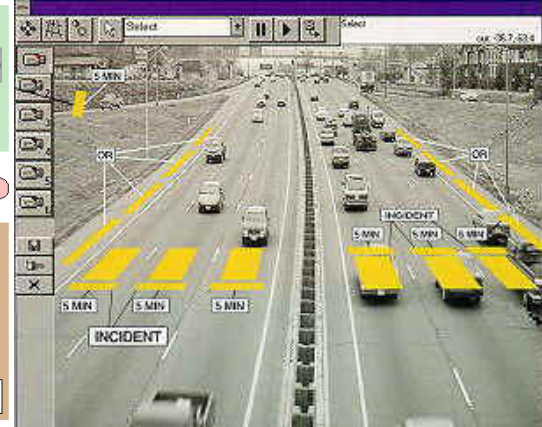
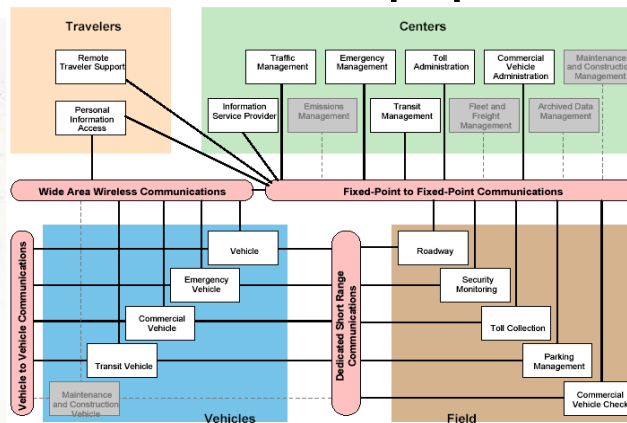
# What are expectation for ITS Studies?

- Broad view
- Understand the evolution of transport
- Make wise use of technologies
- Cost-effective measures
- Innovative transport solutions



# What are expectation for ITS Studies?

1. Technology foresight
  2. Set standard for ITS applications for better integration
  3. Self-dependent technology
- Consider suitable tech. now and future for Thailand
  - Interoperability between components and between systems
  - Strong ITS industries and related applications
  - Low-cost, efficient ITS equipment e.g. sensors



# What are expectation for ITS Studies?

4. Understand the impacts to travelers

- Influences of ITS on travel
  - travel information, route and mode changes
  - Workload due to travel with ITS
  - Safety implications when travel with ITS

5. Understand the impact to transport system

- In a new transport environment; e.g. Travel with better information



# What are expectation for ITS Studies?

6. Have tools for evaluation

- be able to quantify the impact accurately; e.g. simulation

7. Better decision of evaluation

- Feasibility and proper ITS selection to be transport solutions



# What are expectation for ITS Studies?

8. Better Operations by operators
- Productive operators
    - Traffic management
    - Public transport
9. Promote direction toward more sustainable and future transport system
- Realistic, balanced, and sufficiency transport of future.





**ATRANS**



# The 10<sup>th</sup> ITS Asia Pacific Forum 2009

July 8-10, 2009

Bangkok, Thailand



10<sup>th</sup> ITS Asia Pacific

~ *SMART MOVE* ~

<http://ITS-AP2009.in.th>





# ITS ASIA-PACIFIC

Since 1996, 14 member countries/regions of ITS ASIA-PACIFIC have hosted Asia-Pacific ITS Forum & Exhibition in relays.

The 8th & 9th Forums will be hosted by Hong Kong & Singapore.

**2008 Singapore**



**2006 Hong Kong**

Sustainable ITS Development  
in Environment and Logistics

**2005 New Delhi**

Towards New Horizons



**2003 Taipei**

ITS Reaching Markets & Society



**2002 Seoul**

Shaping the Future with ITS



**2000 Beijing**

ITS - New Era/Choice of Transport



**1999 Kuala Lumpur**

ITS - Vision for Efficient Transport



**1997 Cairns**

**1996 Tokyo**



## 14 Countries/Regions of ITS ASIA-PACIFIC

Australia China Chinese Taipei Hong Kong China India Indonesia Japan  
Korea Malaysia New Zealand The Philippines Singapore Thailand Vietnam

ITS Japan is the secretariat of ITS ASIA-PACIFIC.



# Appendix

## ITS Research Needs

Courtesy of Dr. Shladover, UC Berkeley PATH



# Research Fields of ITS

**Universal**

**International**

**National**

- Fundamental hardware and software technology issues

# Research Fields of ITS

**Universal**

**International**

**National**

- **Traveler behavior**
  - **Trip-making decisions**
  - **Driving behavior**
- **Regional transportation modeling and simulation**
- **Traffic modeling, control and simulation**
- **Driver modeling and driving simulation**
- **Cost and benefit evaluation of new systems**

# Research Fields of ITS

Universal

International

National

- **Transportation policy and planning**
- **Institutional issues (privacy, liability, data ownership, public and private roles and responsibilities)**
- **Site-specific application case studies**
- **Financing new ITS systems**
- **Business models and deployment strategies for cooperative ITS systems**
- **Specific system architecture designs**