ITU Workshop on
"Disaster Relief Systems, Network Resiliency and Recovery"

(Phuket, Thailand, 20 May 2013)

Introduction of TSQAURE Traffic Information Service Platform with Flooded Roads Information Distribution Capability

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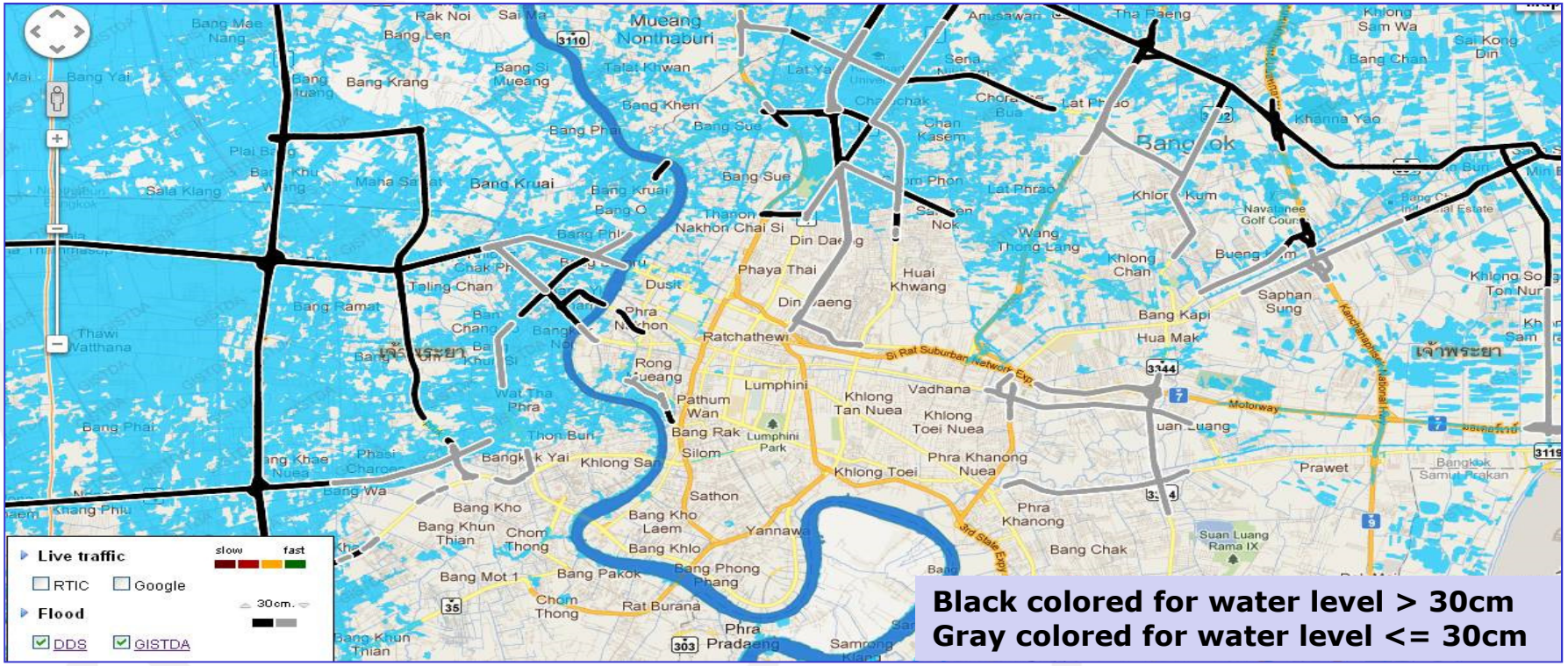
This is the big loss in Thailand

Big loss in Jakarta/Indonesia

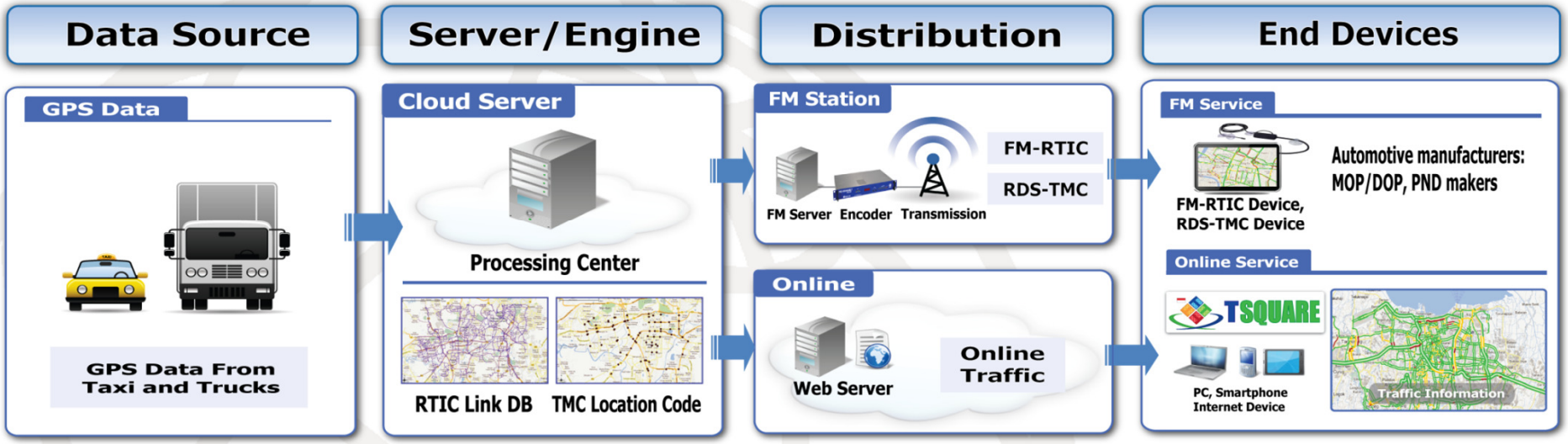
Flooded Roads information Distribution



- **This kind of system has been used to visualize flooded roads during the 2011 Thailand flooding.**
- **It shall be very useful for people to make best decision to manage their ways under flood situation.**

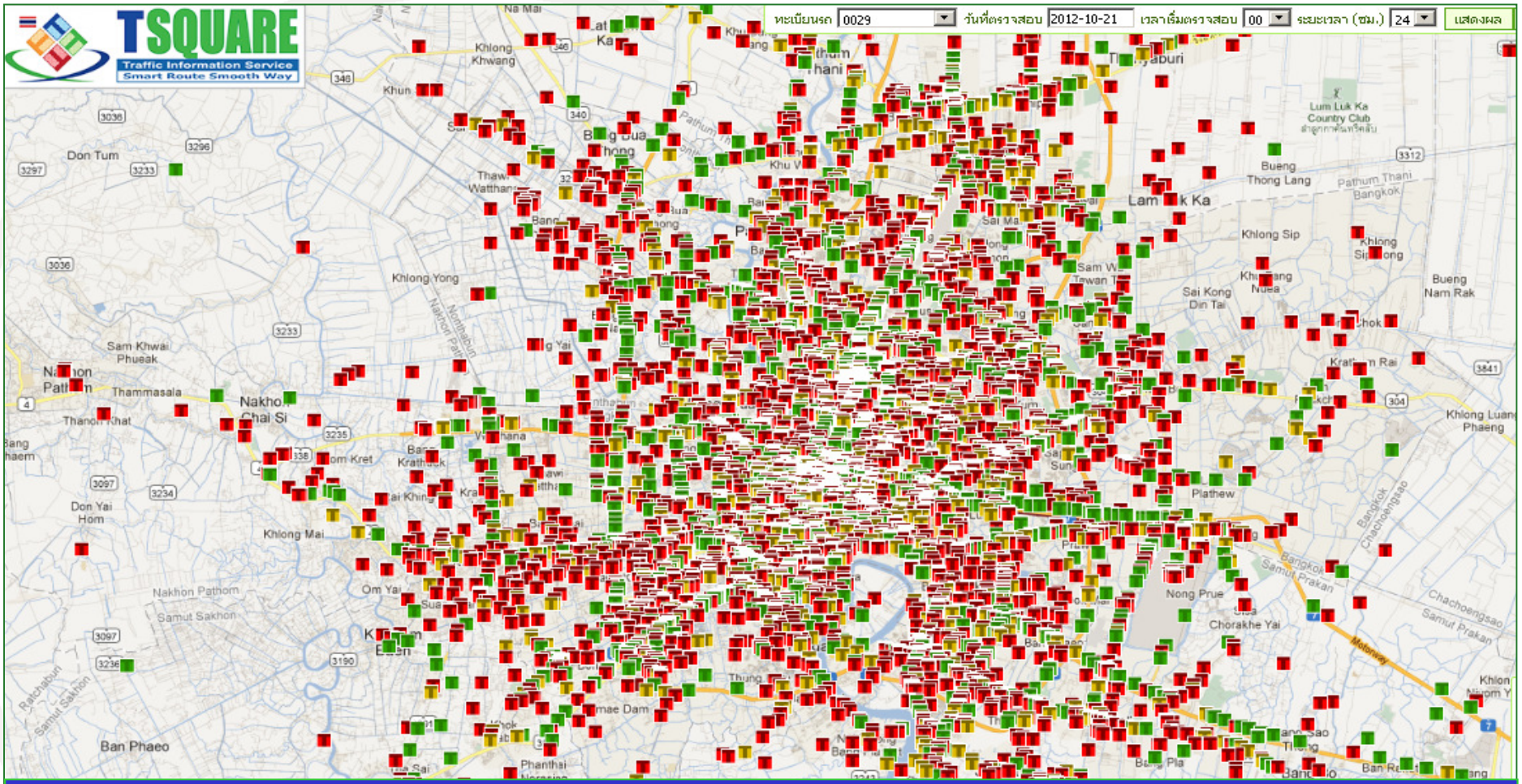
This system could be possible because we have "traffic info" service called TSQUARE.

"TSQUARE" VICS/RTIC Traffic Service in Thailand



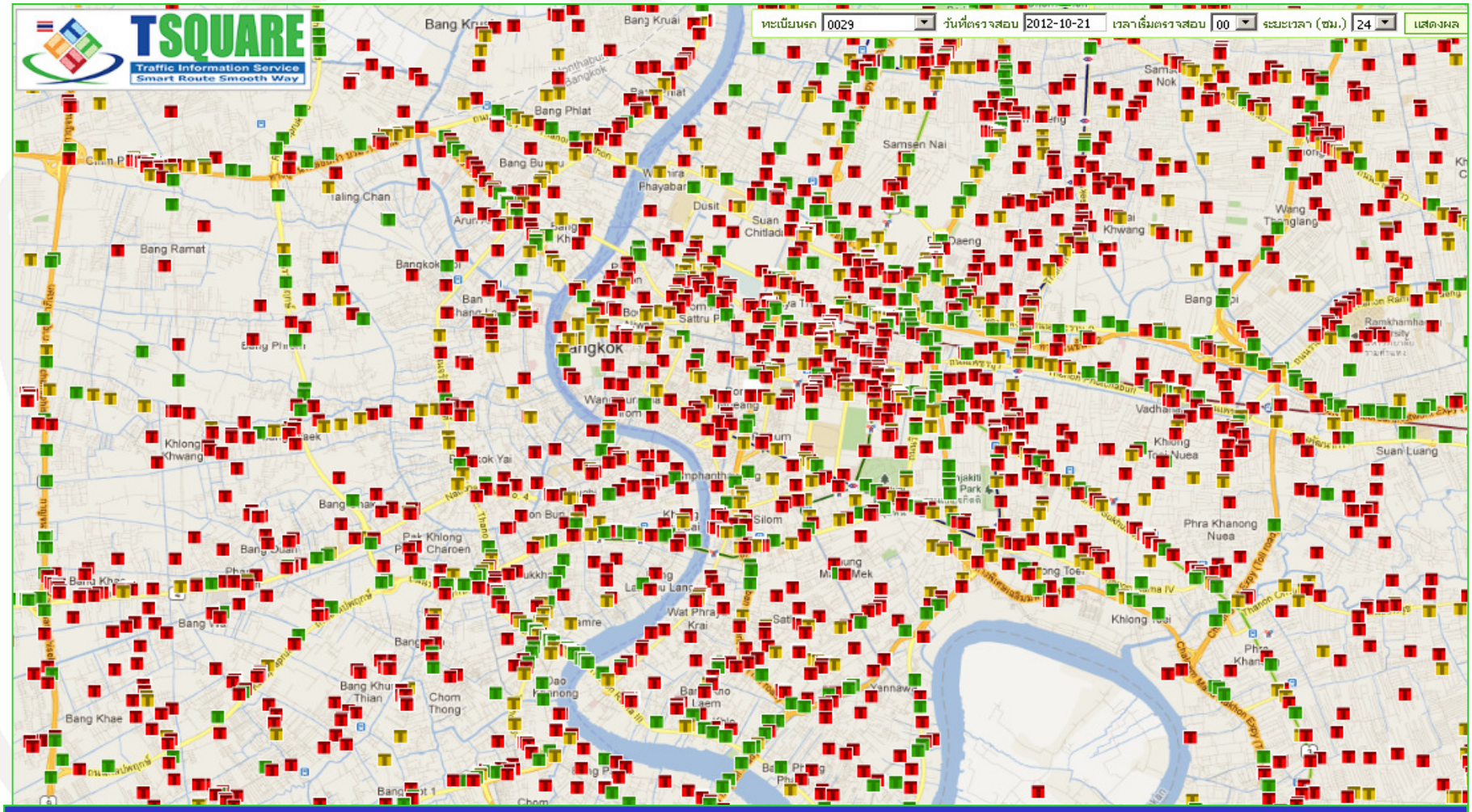
- **Traffic Data Sources: mainly using GPS data from taxi and trucks + government sources whenever available**
  - ★ We are working with taxi companies and logistics trucks to collect GPS data.
- **Software Engine for Traffic Analysis**
  - ★ We are using RTIC traffic engine, proven engine from CENNAVI of China.
- **Architecture is based on RTIC/VICS platform**
  - ★ Smart designed and best for mega cities.
  - ★ Cover traffic not only main roads but also important shortcuts and small roads
  - ★ Thus can really help drivers, road users make better or best
- **Distribution by FM (RDS-TMC, DARC) and internet/mobile**
  - ★ Support various types of user devices and distribution channels.

"TSQUARE" VICS/RTIC Traffic service in Thailand



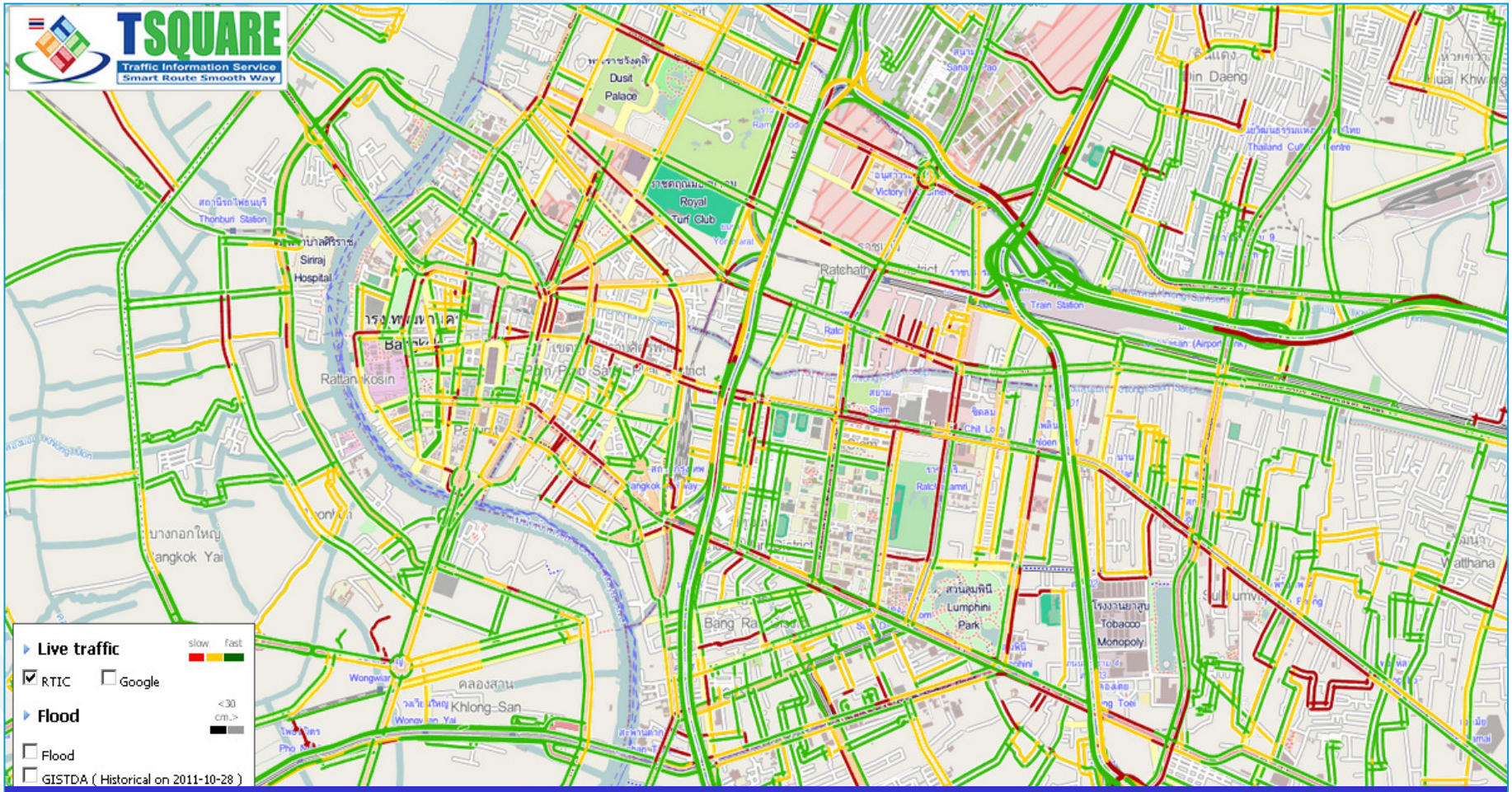
Utilize GPS data from taxi probes as the main source. Capture data every 3 ~ 5 seconds. Combining with existing government data sources become the best data set for analysis.

"TSQUARE" VICS/RTIC Traffic service in Thailand



Taxis run all the times and everywhere on the streets of the city including small roads.

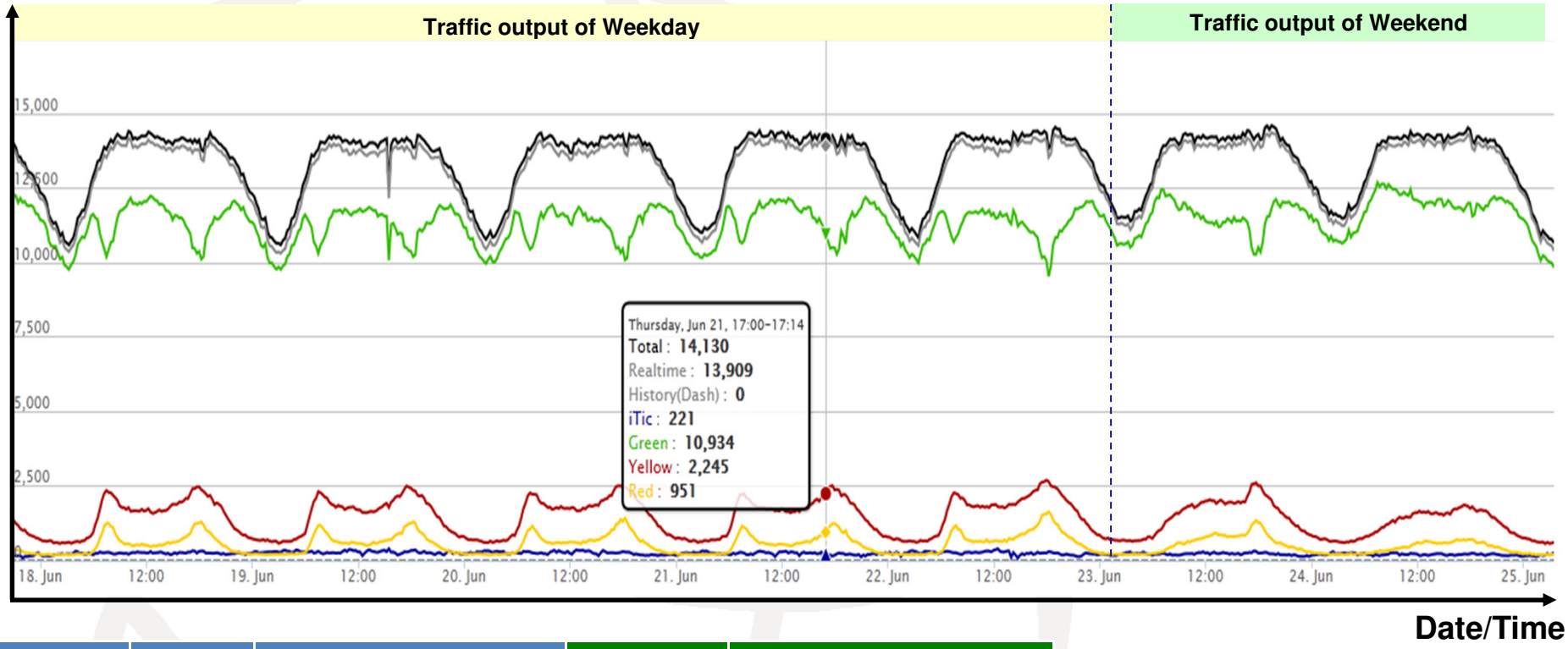
"TSQUARE" VICS/RTIC Traffic service in Thailand



VICS/RTIC system can show traffic in mega cities very efficiently.

Current Traffic Info Output Characteristic

Amount of RTIC Links Output

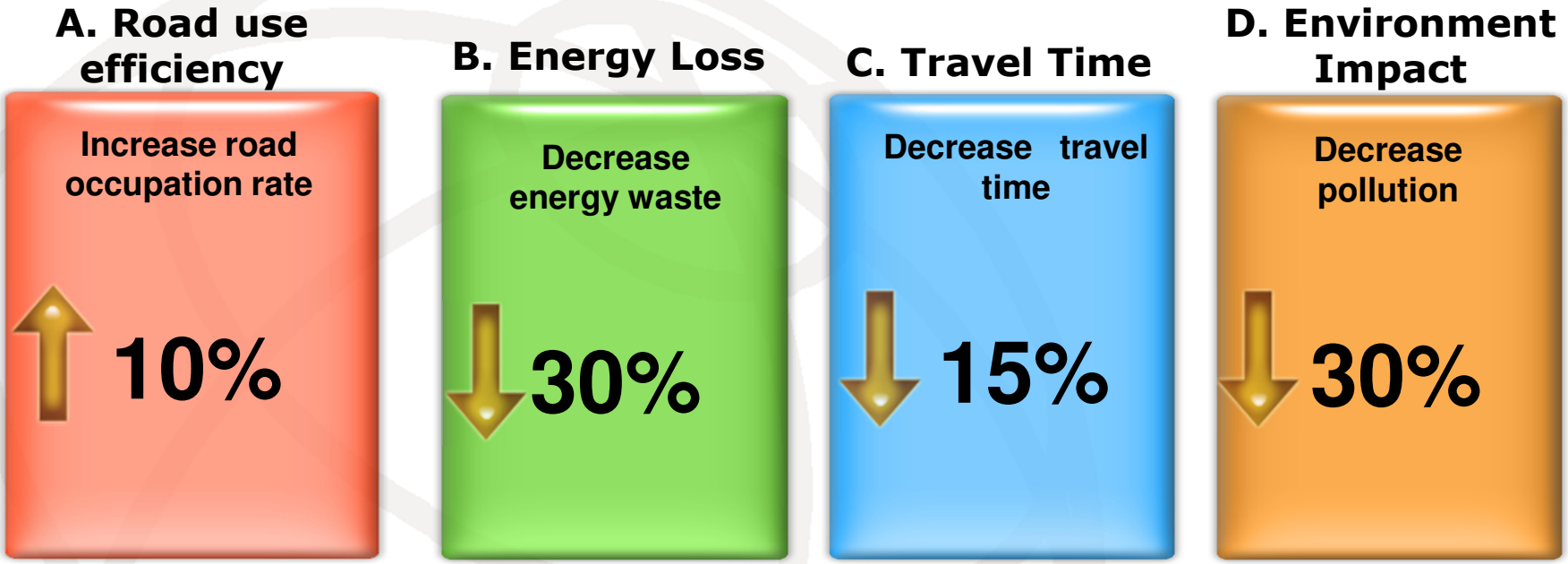


Road Type	Number of RTIC links	Avg Traffic Output		Number of RTIC Link (BKK)	Avg Traffic Output (BKK)	
		RTIC links	%		RTIC links	%
Highway	68	52.68	77.47 %	56	52.83	94.34 %
Expressway	619	504.553	81.51 %	565	514.05	90.98 %
Main Road	12,995	8,745.665	67.30 %	8,402	7,772.35	92.51 %
Other Road	11,727	3990	34.02 %	8,846	3993	45.14 %
Total	**25,409**	**13,292.9**	**52.32 %**	**17,869**	**12,332.23**	**69.01 %**

Summary

- **No historical data**
- **Traffic output: ~ 14,500 links**
- **Data from ~7,800 Taxies**
- **1 Taxi covers ~1.86 links**

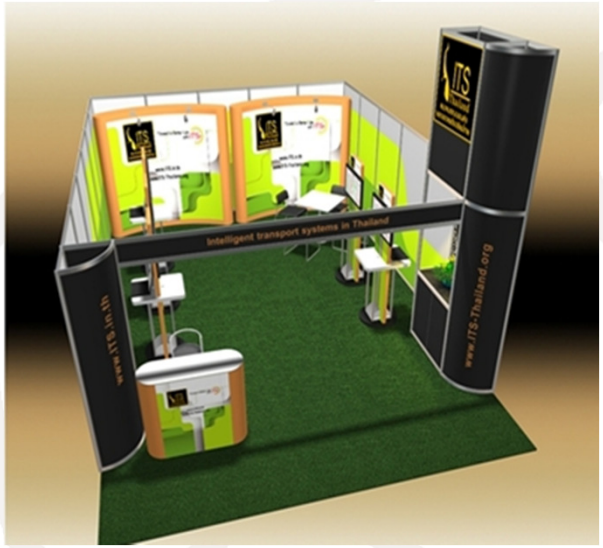
Social impacts from having good traffic info services



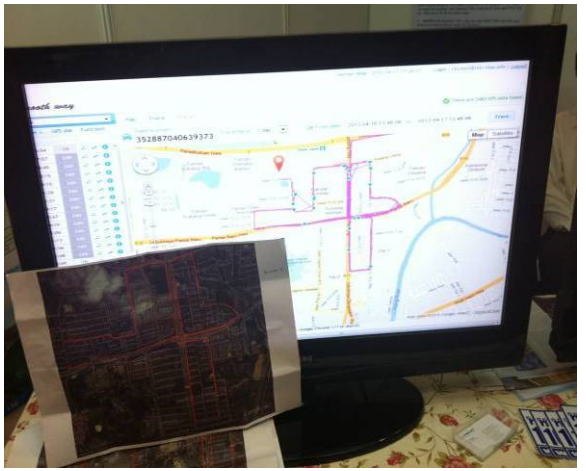
In 90's VICS system in Japan was organized, 20-year cumulative cost of 520 billion yuan of social savings, ease congestion and reduce accidents, the traffic police department to facilitate the creation of a great management.

In 80's Europe and USA started traffic information and now cover the vast majority of countries, have become the DAILY MUST.
2008 Los Angeles test: application of traffic information, reduce travel time by 16.2%, and the fuel mileage increased by 7.8%

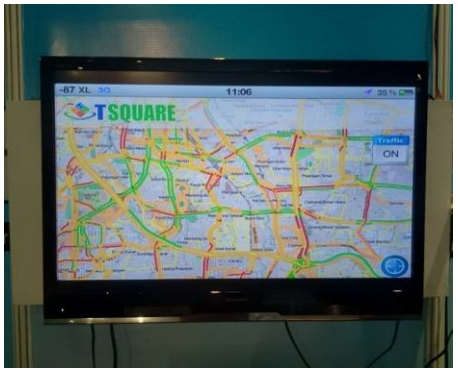
Demonstrated at Bangkok Motor Show 2012, 28 Mar – 8 Apr 2012



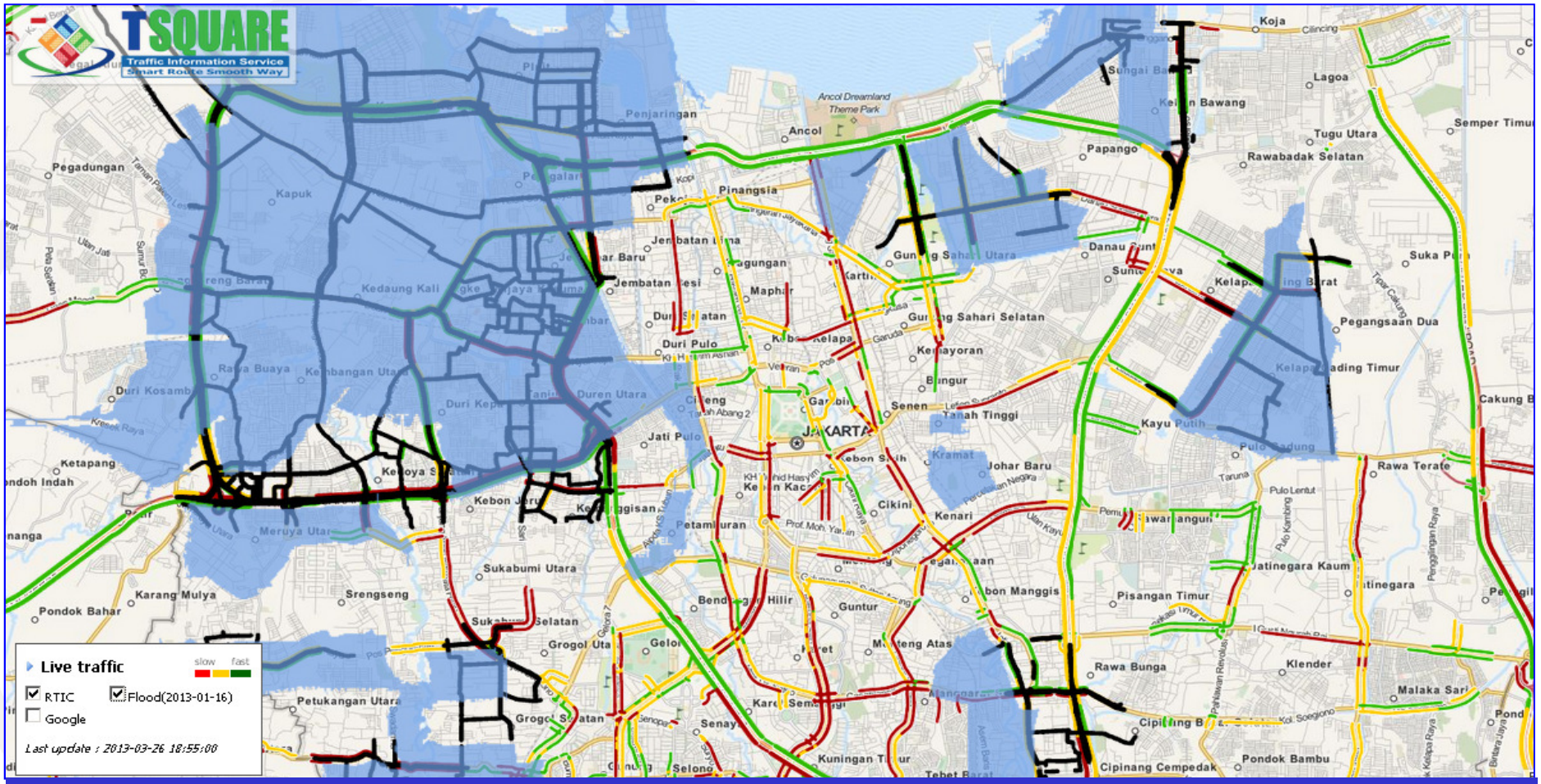
Cooperated with ITS-Malaysia on ITS-AP 2012, 16-18 April, Malaysia



Cooperated with ITS-Indonesia on Jakarta Motor Show, 20-30 Sep 2012

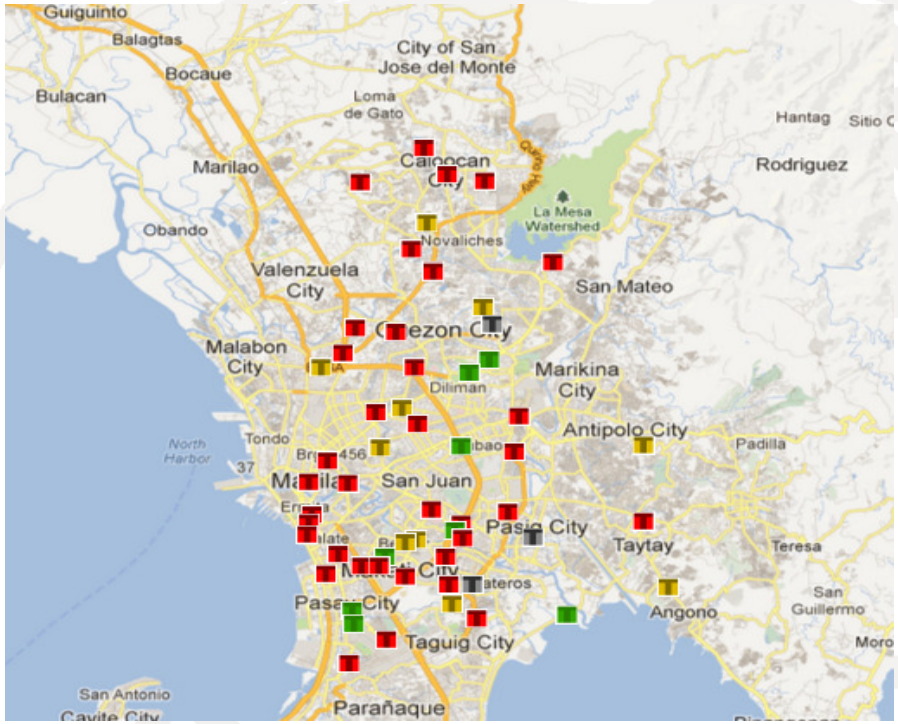


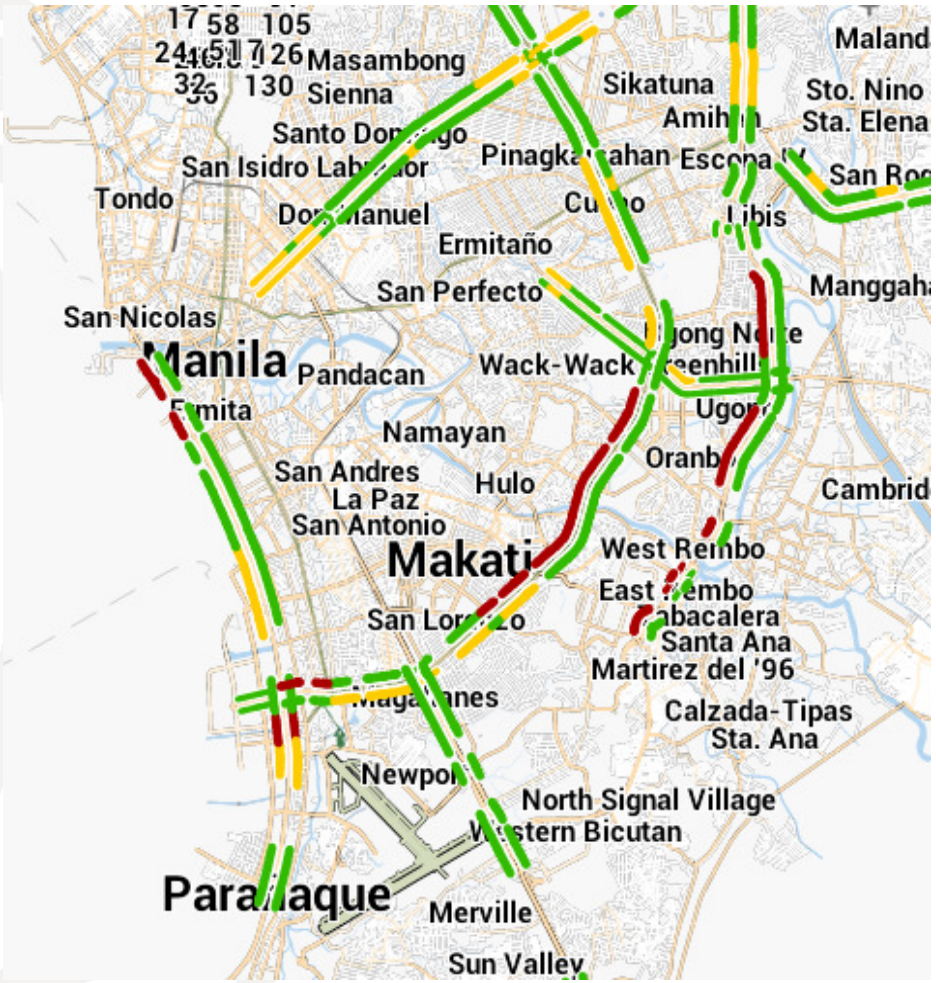
TTET is already technically ready for distributing RTIC traffic services in Jakarta



TTET can support this traffic+flood distribution under disaster time (if the government can provide the flooded roads information)

Pilot Project on Philippines, 2013/01

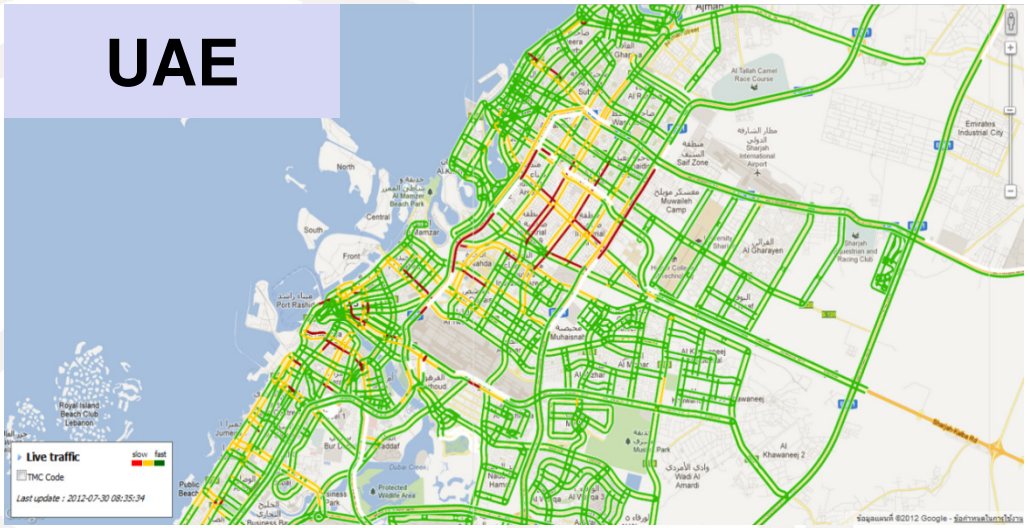




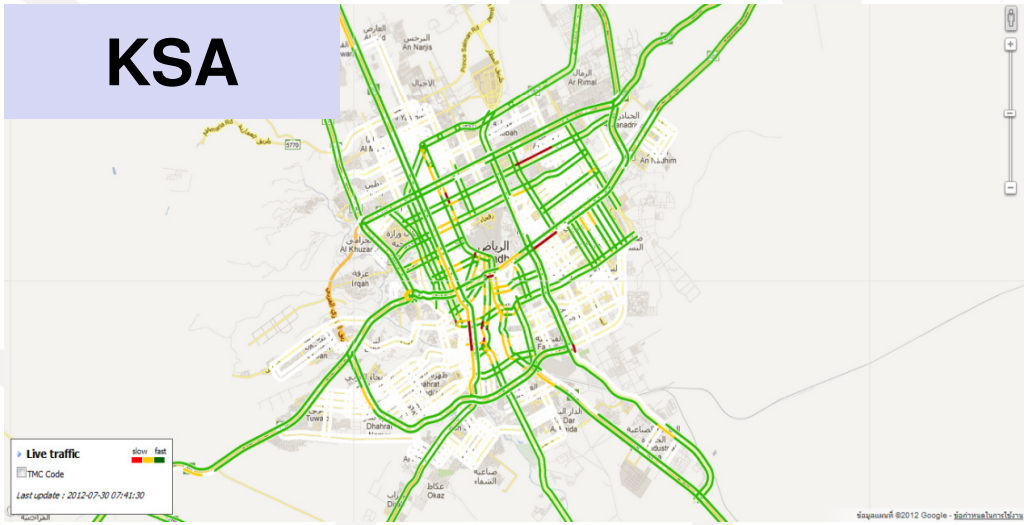
Install Android phones with TTET tracking software to 100 taxis (2013/01/22 – 25)

Traffic Information of Middle East

UAE



KSA



"TSQUARE" Service Roadmap

Coverage: BKK + 6 surrounding provinces
Service: Online-RTIC

Pilot project at Philippines/Manila

FM-RTIC in Bangkok

Conduct MOU with Taxi groups on 2011/12/09, Thailand

10K Taxi GPS Project

Start Online Service Bangkok

Philippines

FM-RTIC in BKK

Online Service Middle East

Q1 Q3 Q1 Q2 Q3 Q4 Q1 Q3 Q4~

2011 2012 2013

RTIC Pilot BKK

ITS-AP2012 Malaysia

Motor Show Indonesia

Move forward ...

Demo on Motor show, April
Coverage: Center of BKK
Service: RDS-TMC, FM-RTIC, Online RTIC

Demo on ITS-AP2012, April
Coverage: Kua la Lumpur
Service: RDS-TMC,, Online RTIC

Coverage: Jakarta
Service: RDS-TMC, Online RTIC

2011 2012 2013

Summary

- **TTET, a Toyota Tsusho group of companies**, has started its traffic information service in Asia based on the Japanese well-established **"VICS traffic information technology"** with customization/optimization to cope with limited traffic probe sensors of Asia by utilizing traffic data from GPS probes from moving vehicles, especially taxis.

- This system has been **proved effective and useful for Asia mega city** under the pilot project sponsored by MIC ministry of Japan in Bangkok in 2011.

- Now TTET has invested to install 10,000 GPS in Bangkok taxis and **started its high quality traffic information service for Bangkok and metropolitan area since 2012**

- **For other countries**, TTET is aiming to start providing the same traffic information service in Indonesia, Singapore and also in Middle East.

- Since this system **can be used to distribute flooded roads information**, which is mostly ready for real use and shall be very useful when flood might happens in the future. We hope each country to adopt this kind of platform and our group shall be ready and welcome to support.

THANK YOU FOR YOUR KIND ATTENTION