



Probe & VICS(RTIC) Traffic information service in Asia countries

31 May,2012

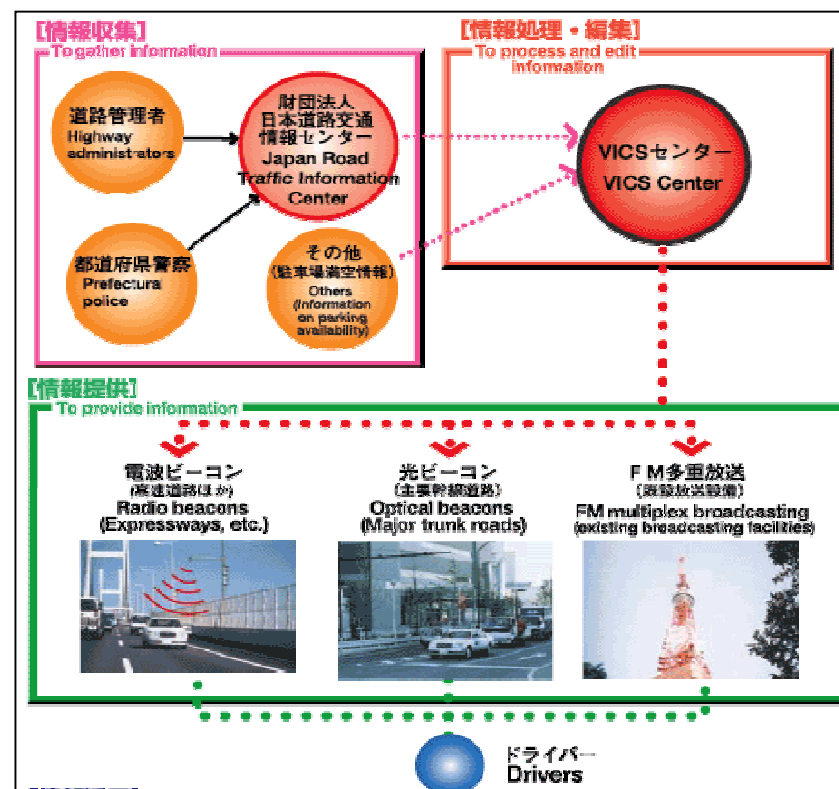
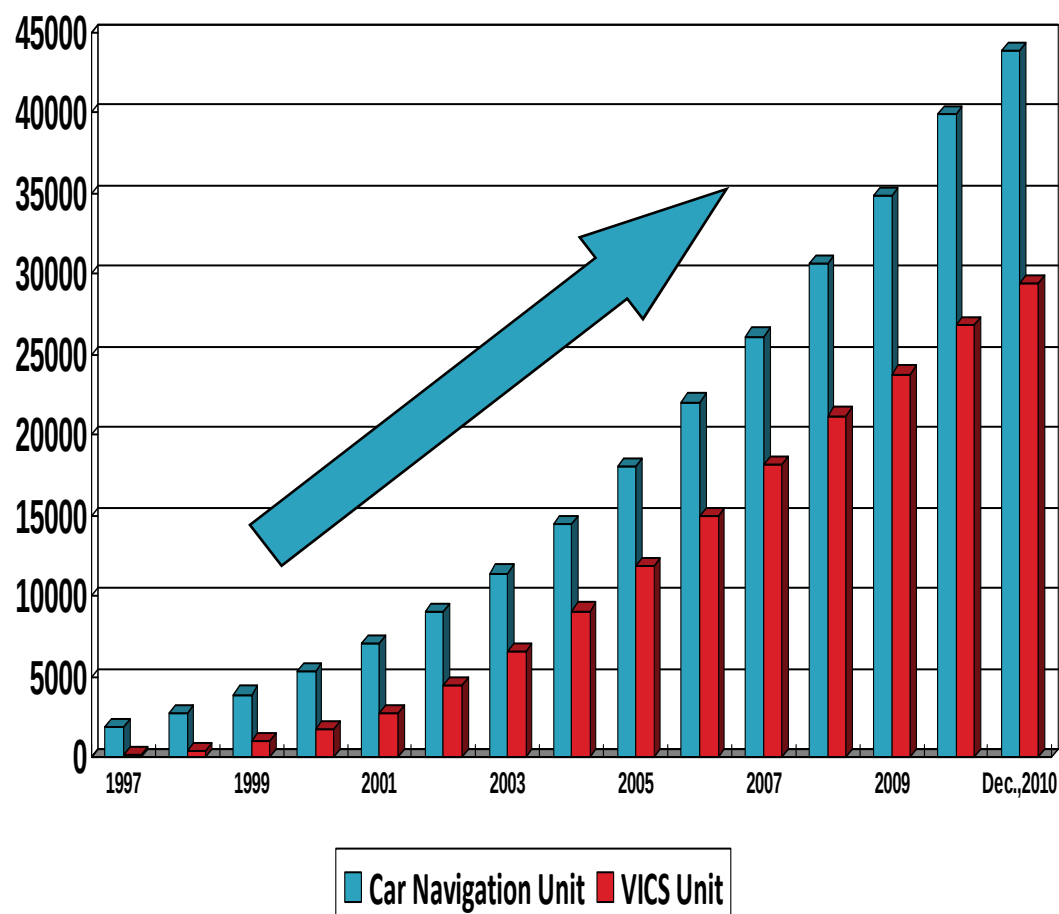
Toyota Tsusho Electronics Corporation

Masahiro Kawamura

TOYOTA TSUSHO ELECTRONICS CORPORATION
Information Technology Service Department
www.toyotsu-electronics.co.jp

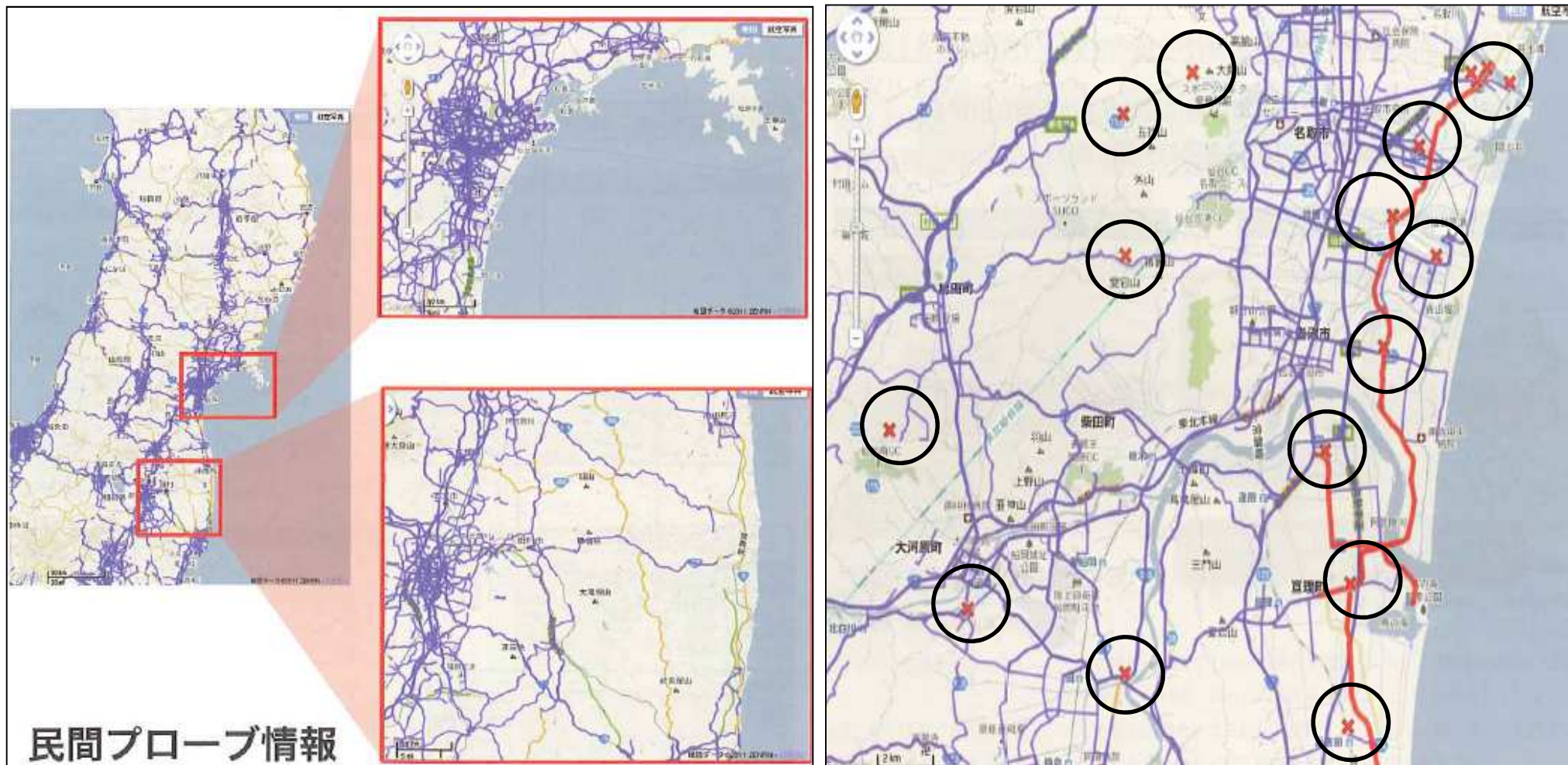
Big success of VICS and Car navigation in Japan

- Over 44 mil. of car navigation units have been sold
- VICS units has been reached 30 mils.



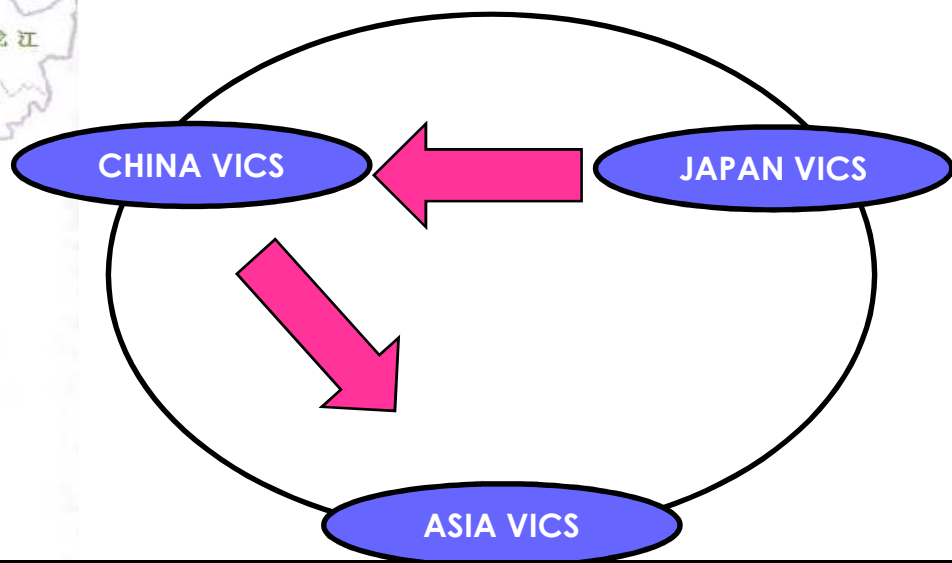
Probe information effect in East Japan big earthquake

Probe information utilized in East Japan earthquake.
Make practicable routes and Suspension of traffic information by probe.



Transfer of [Probe & VICS(RTIC)] in Asia with Cennavi

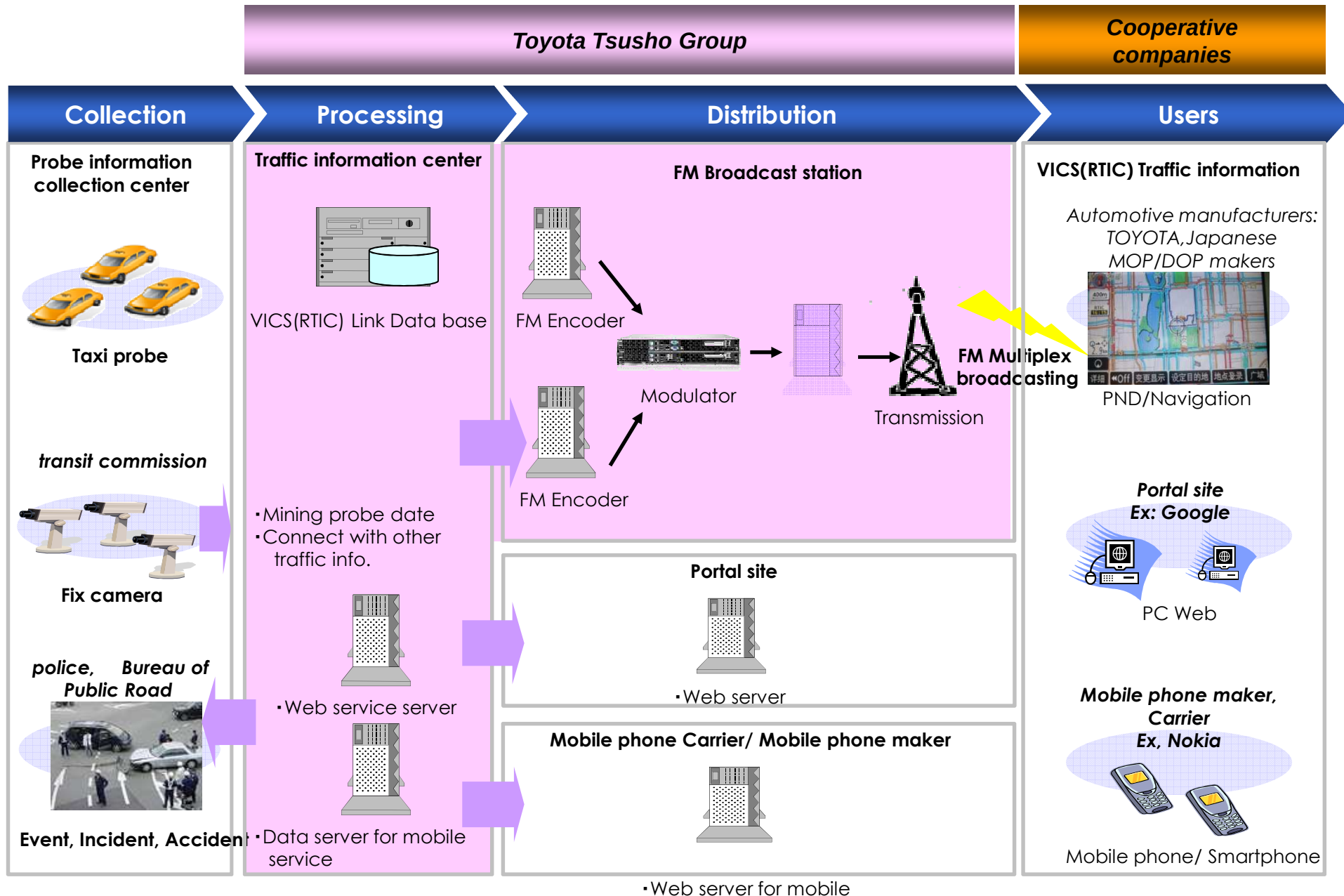
- ITS-Japan contributed VICS transfer to china with TTC supporting
- Cennavi's Probe & VICS(RTIC) traffic information has been already in service in 16 cities in China.(2010)

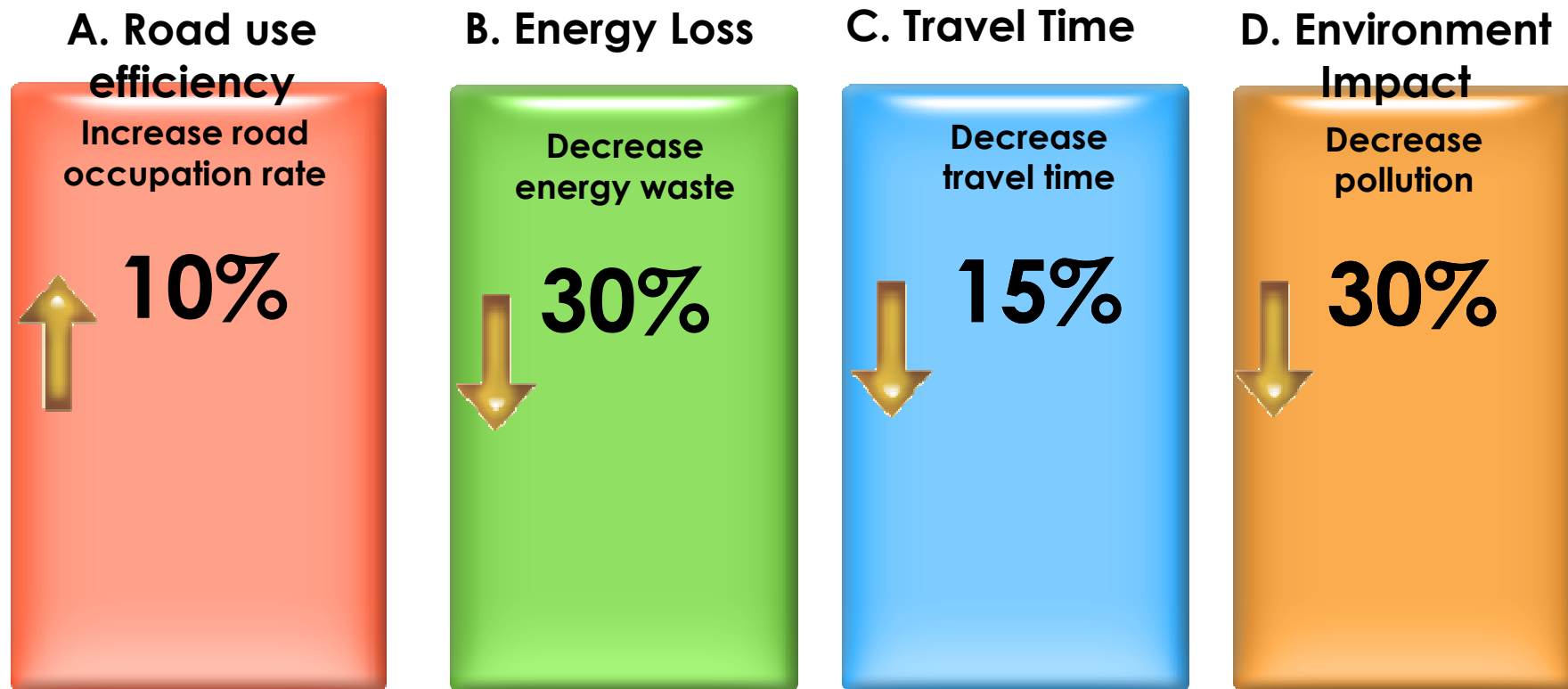


	2008	2009	2010	2011(Planning)
Frequency modulation multiple broadcasting (Includes internet)	Beijing, Shanghai, Guangzhou, Shenzhen	Tianjin, Nanjing, Ningbo, Shenyang, Chenfu, Chongqing	Suzhou, Changsha, Zhuhai, Fuzhou, Foshan, Dongguan	15Cities
Only internet		Qingdao, Shijiazhuang, Kongming, Changsh Suzhou	Wuxi, Hohhot	24Cities

Ref. Cennavi: A partner of Toyota Tsusho Cooperation in China.

Model of Probe&VICS Traffic information service in Asia





In 90' s by the traffic police department in conjunction with other government agencies to build traffic information service system VICS in Japan, 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 services. Traffic information services 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%



PORTRAIT OF TRANSPORTATION PROBLEMS IN JAKARTA



Source: Mot of Indonesia

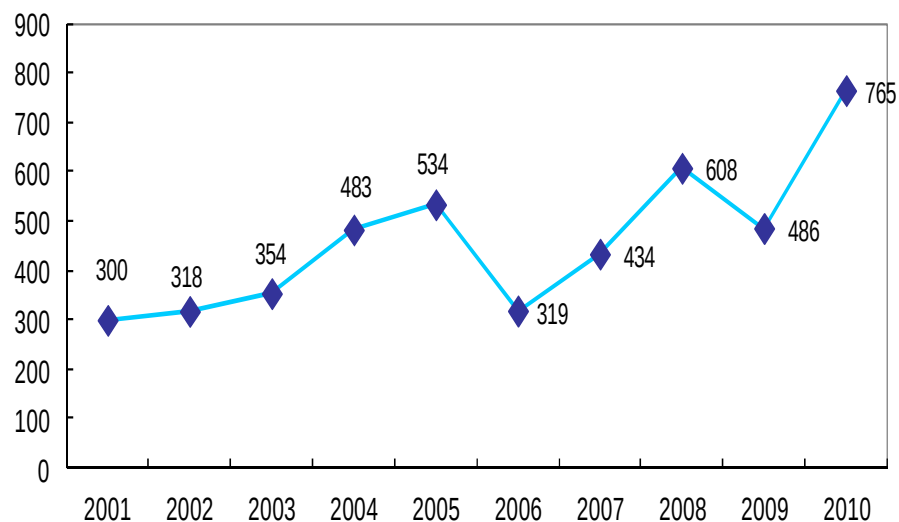
Focusing on Traffic information service in Asia

- Expand the traffic information service in ASIA where has potential of motorization growth.
- Our customer targets are internet, and mobile addition to automotives and navigation.

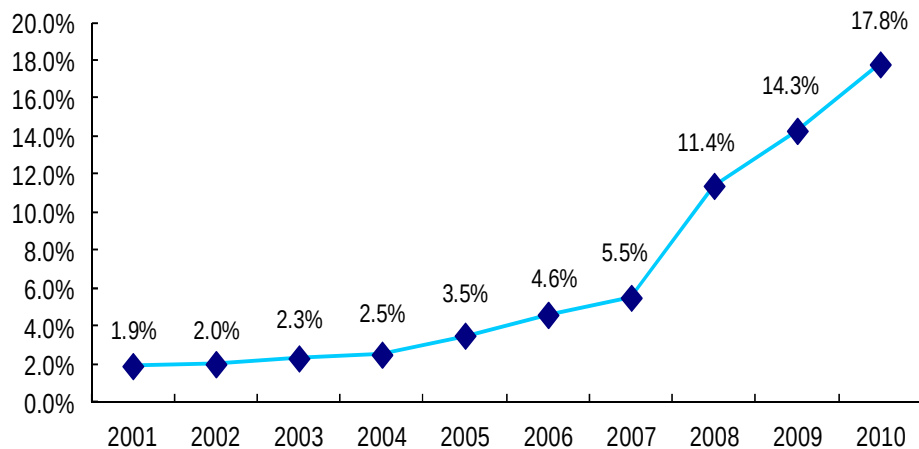
	Japan	China	Thailand	Malaysia	Indonesia	Vietnam	Philippine
Number of retained motor vehicles (Thousands)	75,620	51,000	10,150	8,120	7,350	640	2,970
Sales of car navigation/year (Thousands)	4,520	2,830	243	42	19	38	1
Mobile phone subscriber (Millions)	110	640	80	30	140	70	70
Internet subscriber (Millions)	34	298	16.1	5.2	3.1	6.7	2.5
Population (Millions)	127	1,333	67	28	227	86	89
GDP/person (\$,2007)	22,816	2,483	3,732	6,956	1,925	828	1,626
Number of retained motor vehicles/person	0.595	0.038	0.151	0.29	0.032	0.007	0.032

Rapid growing in Automotive industry

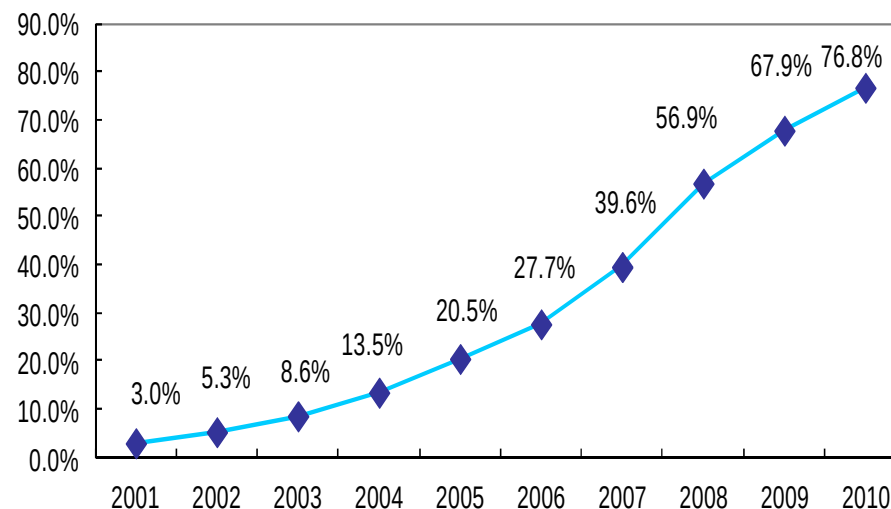
Will be NO.1 market in 2014 with 1 million sales



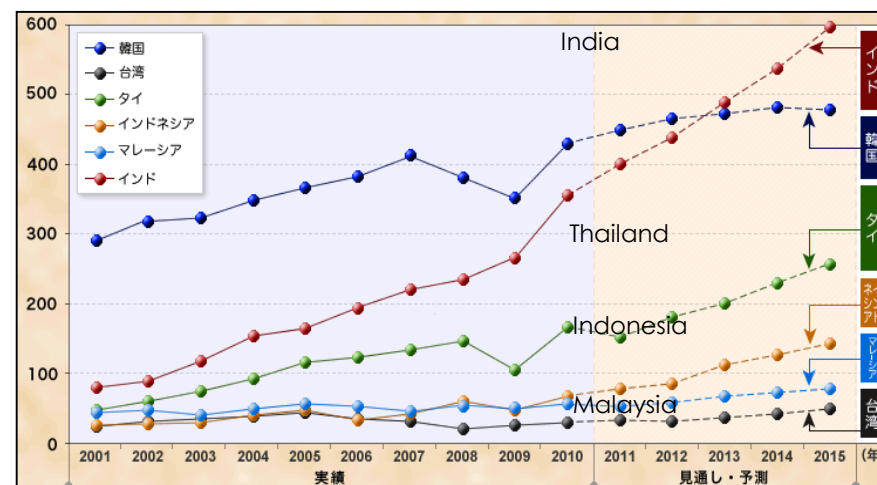
Growth of Internet Market



Growth of Mobile phone market

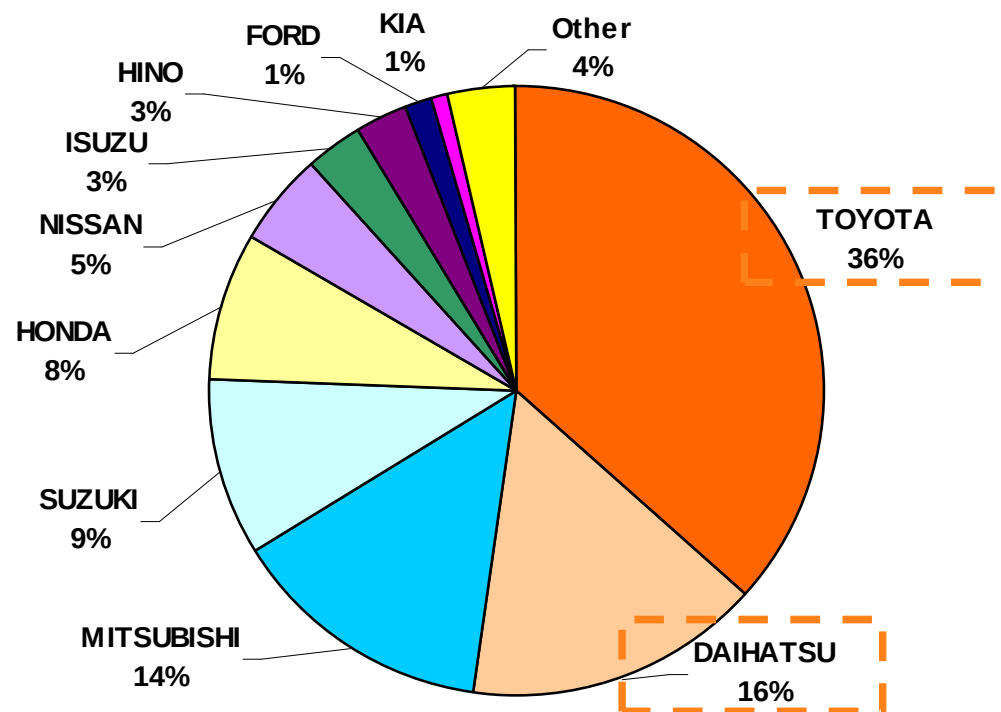


<Automotive growth in ASIA>



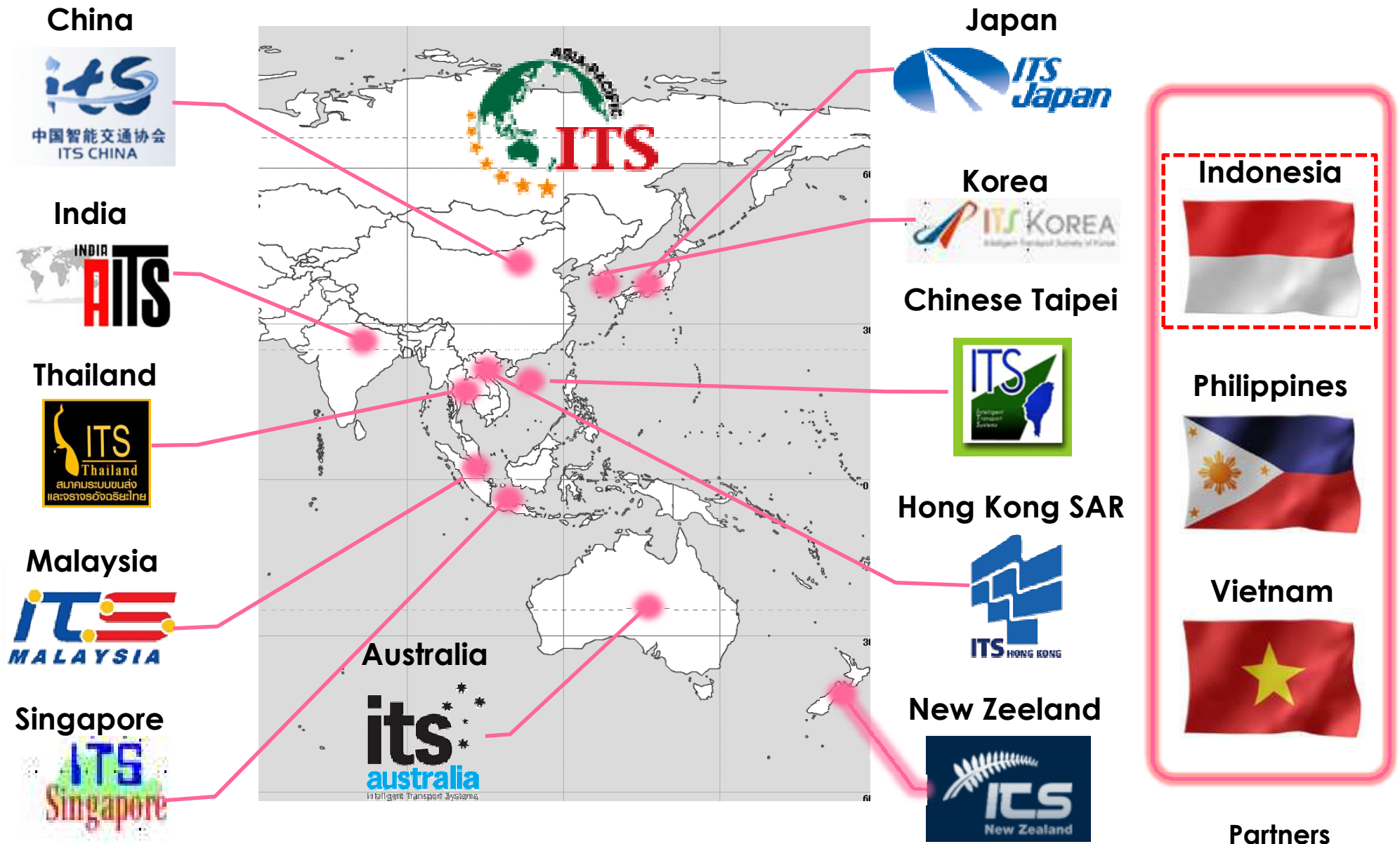
Our customer: Automotives(Indonesia)

- Japanese Car Manufacturers occupy more than 95%
- Toyota/Daihatsu group's share is more than 55%



Manufacture	2010
TOYOTA	280,680
DAIHATSU	118,591
MITSUBISHI	106,483
SUZUKI	71,210
HONDA	61,336
NISSAN	37,542
ISUZU	24,012
HINO	21,297
FORD	8,871
KIA	6,550
other	28,138

Unit



Partners

Background of Toyota Tsusho Group activity of traffic information in Thailand

1) Business Base

Embedded S/W Development Co.:「Toyotatsusho Electronics Cooperation Thailand (TTET)」



- Establishment : April, 2005
- Employer : 230
- Business field : Embedded S/W Development
Automotive elements
ITS, In-car contents business

Technical background

2) Cooperation with Partner in Thailand

Participation to ITS Thailand



TTET project leader, Dr. Itti is secretary general of ITS Thailand

※【Ref.】Mr. Ninnart, honorary president of ITS Thailand, is vice chair man of Toyota Motor Thailand

3) Global Cooperation

Cooperation with Cennavi who has probe data processor and analysis engine.



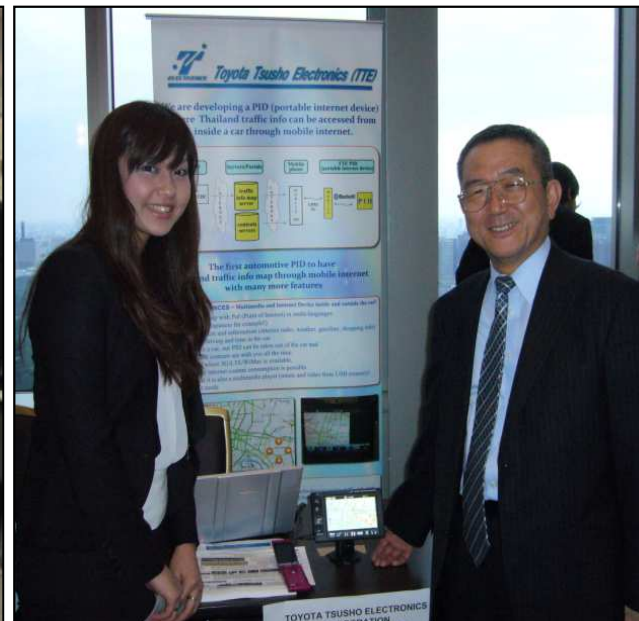
4) Technology Background

Success in Traffic Information Experimental at Bangkok

Verified the efficiency of probe traffic information in Thailand.

Project has started from here!

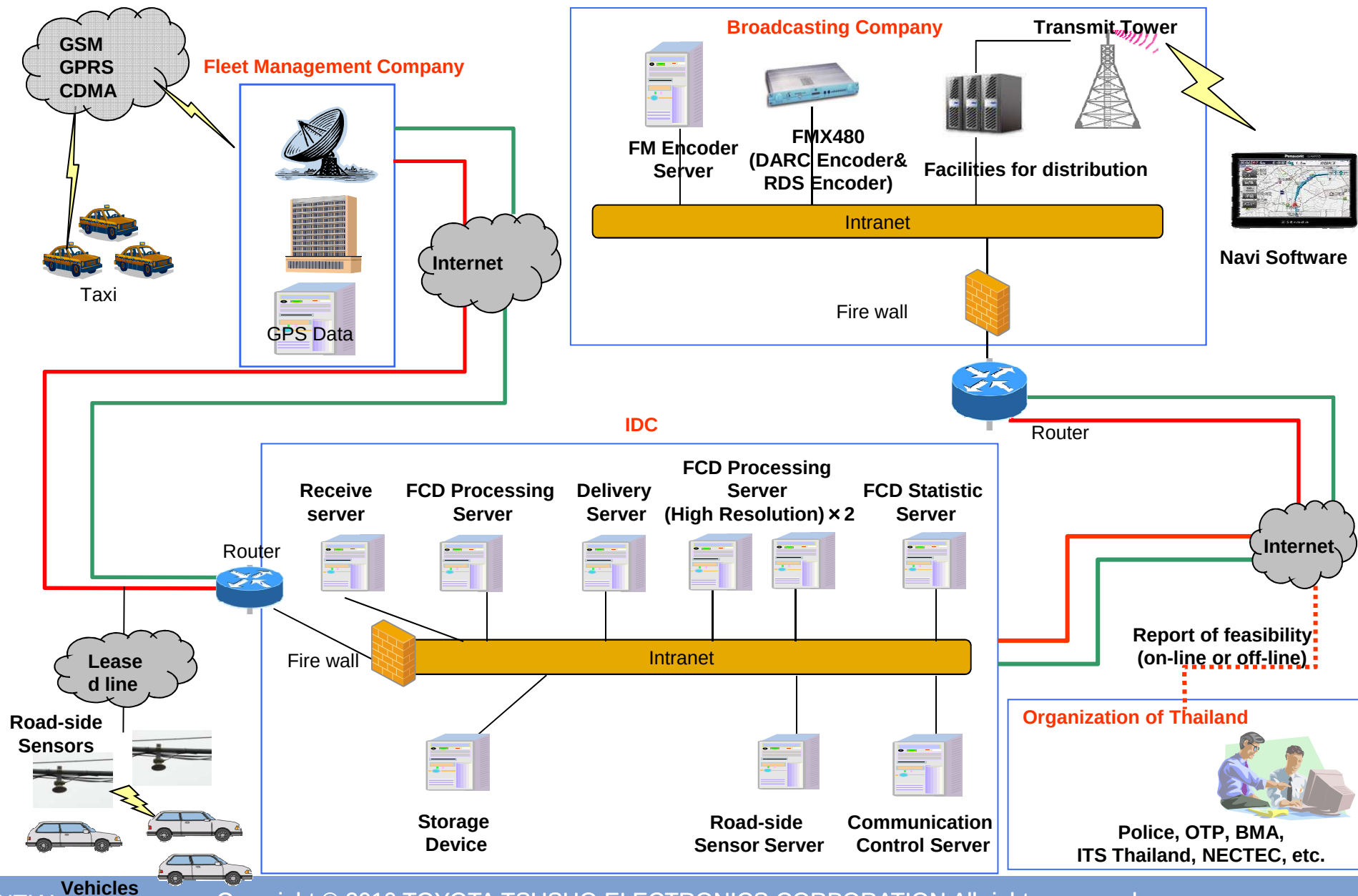
Asia ITS Forum 2010, Tokyo



Bangkok Traffic Information demo/TTE terminal

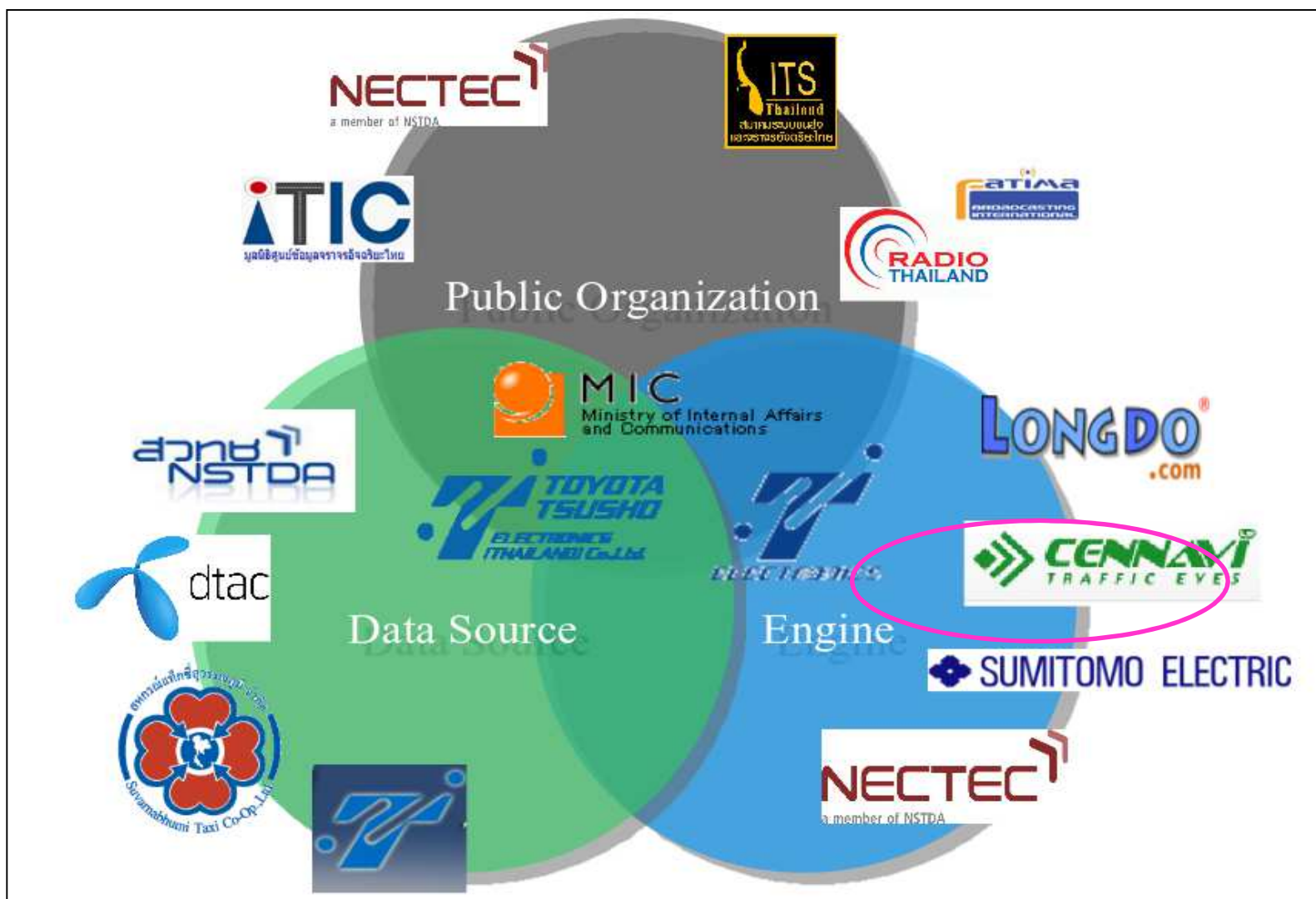
Probe & VICS verification project in Bangkok

Sponsored by MIC, Japan in 2011 (Jan.~Mar.)



Partnership in Bangkok

- ◆ Government, Public 5 / Data source 4 / Processing Co. 4



MIC Japan verification PJ: Smartphone Taxi Probe

The first taxi probe in Thailand by Smartphone with GPS

<Android GPS Smartphone: 700 Units>



<Cradle>



<HOWA Taxi Co.>

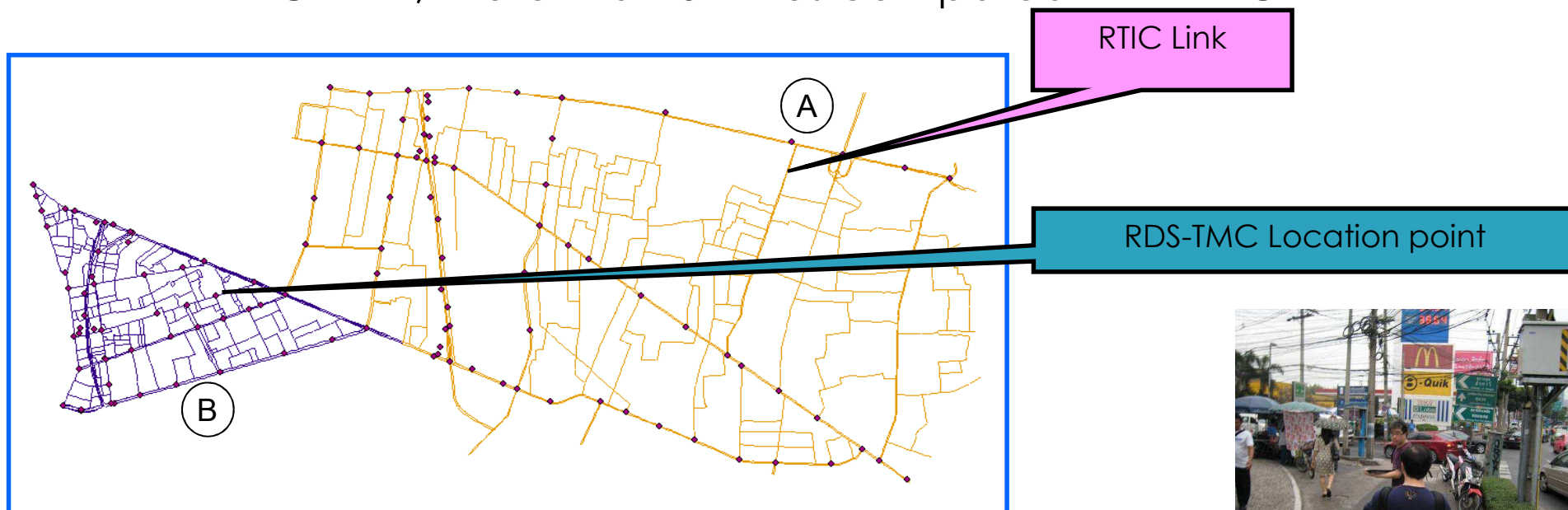


<Probe setting site>



VICS(RTIC) Superiority : High definition

- ◆ RTIC Link , more than 6 times compared with TMC



* Procedure of Link equipment : Local survey plan

- Confirm the status of roads, signals, and contraction by foot and car.
- Confirm the accuracy of RTIC links in each junction.



< Local survey by foot >

Items		Total Road Elements	RTIC		TMC	
			Link	%	Point	%
エリア設定	(A)	5366	594	11.07	98	1.83
	(B)	4368	450	10.30	76	1.74
	Total	9734	1044	10.73	174	1.79

<Main road>

<Business Center>

TMC



RTIC Linc



Exhibited RTIC traffic information additional to RDS-TMC which is broadcasted by TTET in ITS-Thailand booth.



Attendants from Thailand side

Ministry of Information and Communication Technology: Krairiksh Chuti (Minister)
 Ministry of Transport
 Bangkok Metropolitan Administration
 Metropolitan Police Bureau
 Traffic Police Division
 Nation Broadcasting and Telecommunications Commission
 National Science & Technology Development Agency (NSTDA)
 National Electronics and Computer Technology Center (NECTEC)
 ITS Thailand (Vice Chairman, Toyota Motor, Thailand)
 ITS Thailand (Associate Professor), Faculty of Engineering, Chulalongkorn University



31 April, 2011

Our plan to launch VICS(RTIC) traffic service in Thailand

We utilize GPS data from car probes as main source.

<https://www.rtic-thai.info/10k/>

The screenshot shows the RTIC Thailand website interface. The main area displays a map of Bangkok with numerous red and green squares representing traffic data points. The sidebar on the left contains Thai text and logos for TSquare and RTIC.

TSquare
Smart route smooth way

RTIC

★ โครงการติดตั้ง GPS ในแท็กซี่ หมิ่นคันทั่วกรุงเทพฯ !

หมิ่นแท็กซี่ 10K TAXI GPS

www.rtic-thai.info

TRAFFIC SERVICE

สำหรับบริการข้อมูลจราจร TSquare traffic service ขอเชิญชวนท่านเจ้าของแท็กซี่ที่สนใจเข้าร่วมโครงการ ติดตั้งได้ที่ศูนย์วิทยุ สี่แห่งต่อไปนี้

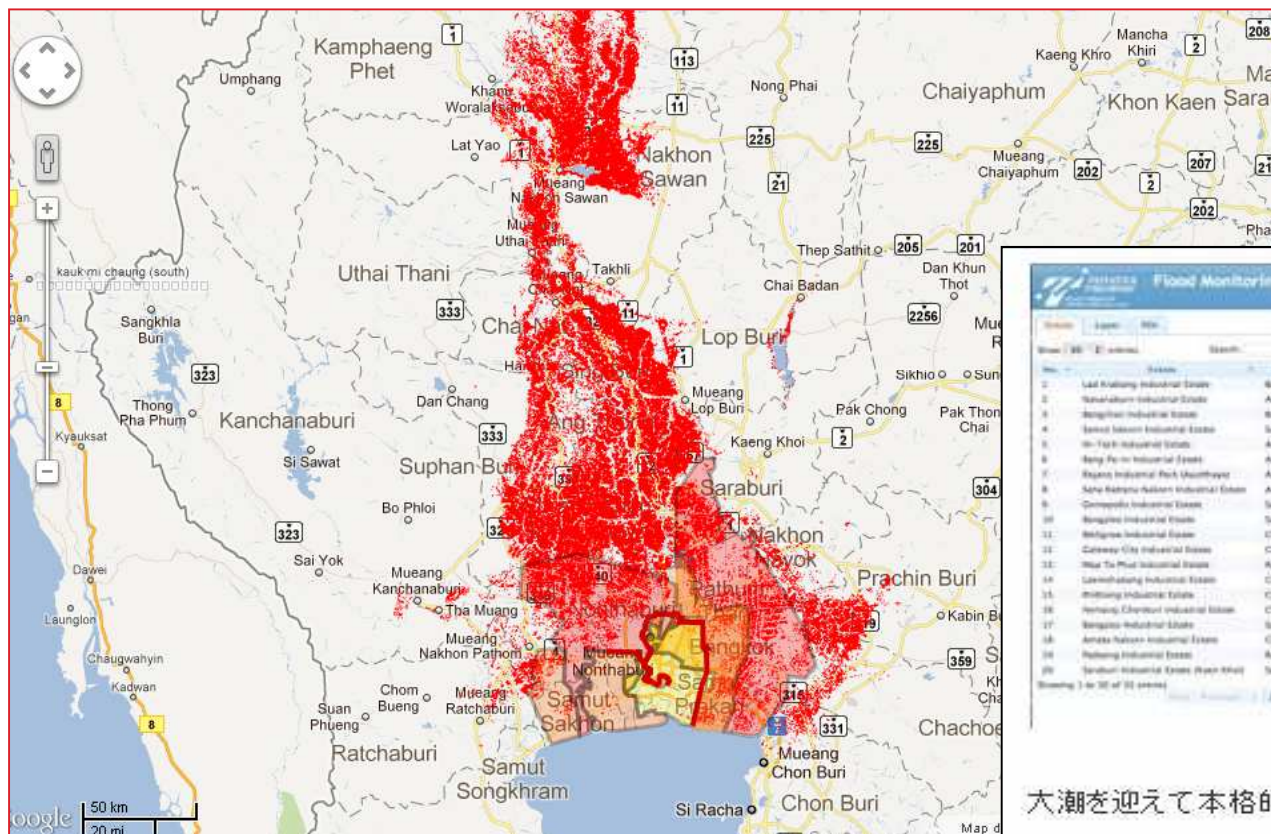
- ▶ ศูนย์วิทยุสื่อสารแท็กซี่ นครชัย คุณเรนกร 02-8788706.9 เวลาติดต่อ 8.00 - 17.00 น.
- ▶ ศูนย์สหกรณ์ปทุมวันแท็กซี่ คุณไพโรจน์ : 081-422-9016
- ▶ ศูนย์วิทยุสื่อสารสหกรณ์แท็กซี่สยาม คุณพงษ์ศักดิ์ : 087-078-8007
- ▶ อุไรทองแท็กซี่ คุณรัชกฤต : 081-822-1686

พิเศษ! ค่าใช้จ่ายเพียง 1,000 บาทต่อปี ติดตั้งฟรี!

Probe effect(Big flood in Bangkok)

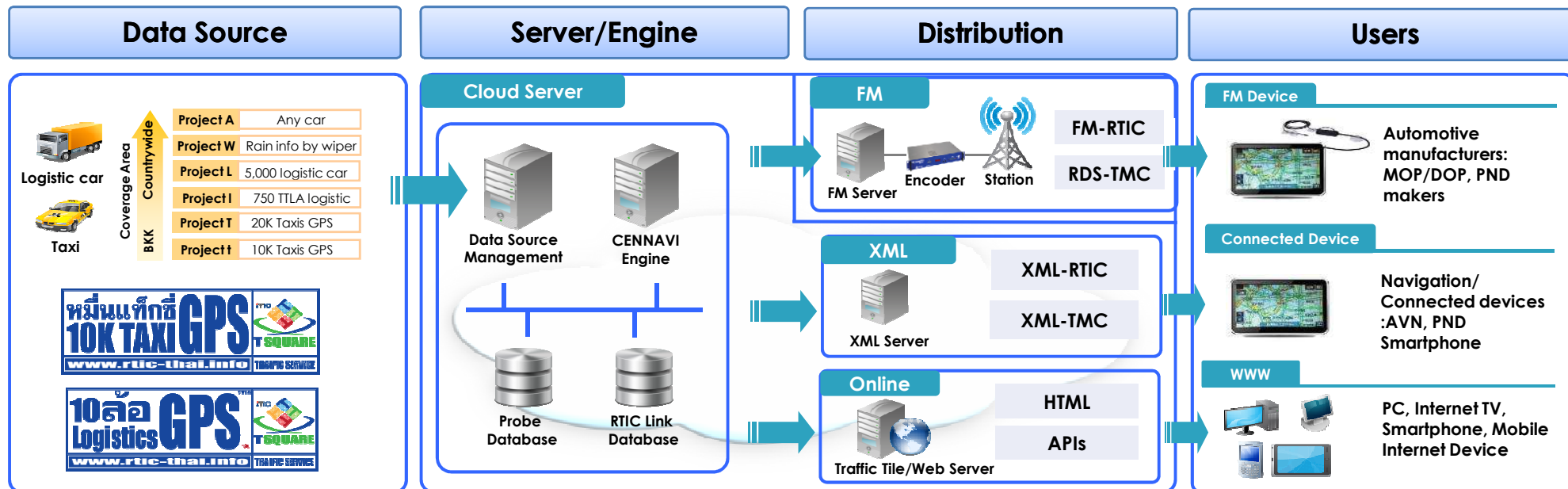
Toyota Tsusho made a great flood watching WEB!

<http://anngle.org/it/toyota-flood.html>



大潮を迎えて本格的にバンコクの状況が緊迫状態に入った現在。日本企業の技術が結集されたような、洪水状況の監視サイトが公開されました。これまで、今回の洪水に対して、様々なタイの企業が避難関連サイトを公開していますが、今回の豊田通商さんの洪水監視サイトは、かなりの精度だと思われます。

Our plan to launch VICS(RTIC) traffic service in Asia



- 2012/3 ~ **FM-RTIC/online RTIC service starts in Bangkok**
- ~2013/4 **Expand RTIC services to Thailand big cities.**
- 2012/4 ~ **Collaborate with CENNAVI for extended services utilizing new technologies (DAB, TPEG, ...)**
- 2012/Q3~Q4 **Target to start RTIC service in Jakarta and then extended to other cities.**



Our plan to launch VICS(RTIC) traffic service in Asia

Country	Partners	FY2012				FY2013~			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Malaysia	ITS-Malaysia, TTMalaysia	★	ITS-AP2012, 12/04 FM, XML/Online (demo)			Target to start RDS-TMC/FM-RTIC From 2013~ in these countries/regions			
Singapore	ITS-Singapore, TTSP, LTA, QI		★	12/07: FM,XML/Online					
Indonesia	ITS-Indonesia, MoT, TTI, Taxi companies			★	12/09:FM, XML/online demo				
India	ITS-India, TTIndia, Taxi			★	XML/Online				

ITS World Congress Tokyo, 2013

We'd like to present Traffic service results in ASIAN countries at ITS World Congress Tokyo 2013
[Probe & VICS(RTIC)] is the entrance of ITS infrastructure

ITS Europe
(Europe)

ITS America
(America)



ITS Japan
(Asia Pacific)



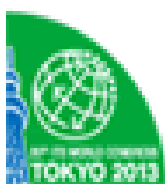
ITS Korea
ITS China
ITS HK
ITS India
ITS Thailand
ITS Malaysia
ITS Singapore
ITS Taiwan

ITS NZ

ITS Australia

Framework of ITS AP

1. MOU among 11 ITS organizations in AP
 - ① Promote ITS in AP
 - ② Organizing ITSAP Forum
 - ③ Support ITS World Congress
2. ITS AP BOD
3. ITS Japan is a secretariat of ITS AP



20TH
ITS WORLD CONGRESS
TOKYO 2013



THANK YOU!