



Region Update - Asia

Eveline Mou

General Manager, STAR Systems International Limited

IBTTA Webinar: Global Outlook on Post-Pandemic Toll Revenues

April 18, 2023



Self-Introduction

Eveline Mou (MSc, MBA)

- General Manager, Star Systems International Limited (SSI)
- >10 years of executive management experience, focus on Strategic Planning, Product Management and Marketing
- Joined SSI since 2020
- Based in Hong Kong

About SSI

- **World Leader** in Vehicle Identification for Smart Cities and Intelligent Transportation Systems
- **Provider** of High-Performance Passive and Multi-Protocol Automatic Vehicle Identification (AVI) Technologies
- **Best-in-Class Products:** Transponders, Readers, Antennas & Professional Services





Asia

With a focus on the following countries:

- Philippines
- Malaysia
- Thailand
- Vietnam
- India



Source: Bing Map



Philippines

Profile

Population: 113.9 million

Area: 300,000 km. sq.

★ GDP (2021): ~ \$394 Bil

★ Projected 2023 GDP Growth: ~6%

of Reg'ed Vehicles: ~ 6 Mil / 4.7% 5-yr CAGR

Length of Toll Roads: > 500 km

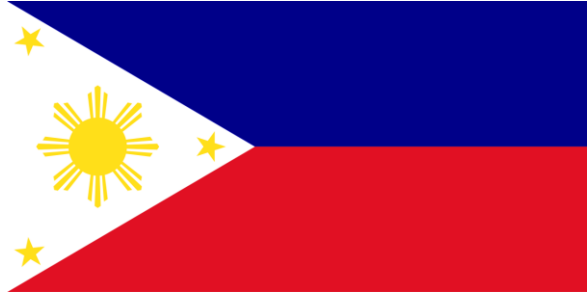


Manila

Photo Credit: Klook

Sources:

CEIC Data, Department of Economic and Social Affairs of United Nations, Department of Public Works and Highways of the Philippines, Encyclopedia Britannica, IMF, State Information Center of China, United Nations Conference on Trade and Development, World Bank, World Trade Organization



ETC and infrastructure Growth Interoperability

Transitioning from DSRC to ISO 18000 6C

House Committee on Transportation pushing for Toll Interoperability

Great Potential for Free Flow Tolling & Traffic Flow and Congestion Pricing



Manila is ranked
the 9th most
congested cities
globally

Sources:
The Philippine News Agency, TomTom International BV



Under Planning / Construction

~800km

- 3rd Candaba Viaduct (5km)
- Cavite Laguna Expy (44.6km)
- Cavite-Tagaytay-Batangas Expy (46.5km)
- Cavite C5 Expy (19.4km)
- Cavite C5 South Link Ext. (7.7 km)
- Cavite Segment 4 Ext. (1.2km)
- Cavite Segment 5 (15.9km)
- Cebu Cordova Link Expy (8.9km)
- Cebu-Cordova Link Expy to Barangay
- Guadalupe Ext.(2 km)
- NLEX Connector (8km)
- NLEX Segment 10 R-10 ramp (2.6km)
- NLEX Segment 8.2 (11.5km)
- NLEX Segment 8.2 Section 1A Ext. (2km)
- NLEX-SLEX Connector Road (8km)
- Pasig River Expressway (19.37km)
- Port Expy (15.1km)
- SLEX-TR4 4 & 5 (~470km)
- Skyway Stage 4 (80km)

Sources:

Metro Pacific Investments Corporation, Metro Pacific Tollways Corporation, San Miguel Corp



Malaysia

Profile

Population: 32.7 Million

Area: 329,847 km. sq.

GDP (2021): ~ \$373 Bil

★ Projected 2023 GDP Growth: ~4.5%

★ # of Reg'ed Vehicles: ~ 33.3 Mil

Length of Toll Roads: ~ 2,300 km

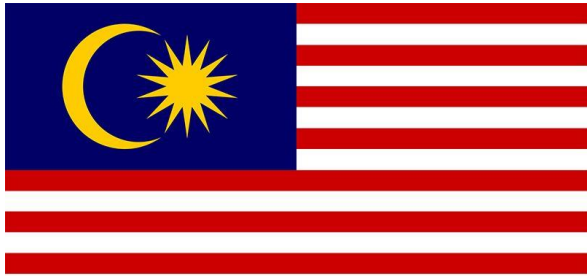
Sources:

Department of Economic and Social Affairs of United Nations, Encyclopedia Britannica, IMF, Malaysian Highway Authority of Malaysia, Paul Tan's Automotive News, State Information Center of China, United Nations Conference on Trade and Development, World Bank, World Trade Organization



Kuala Lumpur


Photo Credit: Expedia



Per The Malaysian ITS Blueprint (2019-2023), the MoT is committed to Seamless Intelligent Mobility

1. Transitioning from 3 type of ETC DSRC / NFC (Touch & Go) / ISO 18000 6C to 6C + ANPR
2. Congestion Free Infrastructure
3. Goal is to get to Free Flow fully implemented before 2025

Sources:
Google Waze, Malaysian Expressway System, Paul Tan's Automotive News, World Highways

 With an avg. commute time of 44.3 mins, Kuala Muda is ranked the 8th city with the longest commutes



Under Planning / Construction

~1,000km

- Bangi-Putrajaya Expy (17km)
- East Coast Expy 4 (279km)
- Jelas Expy (116km)
- Johor Bahru–Pasir Gudang Elevated Expy (50km)
- Kuala Lumpur Northern Dispersal Expy (24km)
- Lingkaran Tengah Utama Expy (300km)
- Paroi–Senawang–KLIA–Salak Tinggi Expy (45km)
- Penang Outer Ring Road (17km)
- Penang Undersea Tunnel (7.2km)
- Petaling Jaya Dispersal Link Expy (15km)
- South Kedah Expy (91km)
- Sungai Klang Expy (41.2km)
- West Ipoh Span Expy (94km)
- Widening of the Senai-Desaru Expy

Sources:

FMT Media Sdn Bhd., Malaysian Expressway System, Paul Tan's Automotive News, World Highways



Thailand

Profile

- ★ Population: 71 million
- Area: 513,120 km. sq.
- GDP (2021): ~ \$506 Bil
- Projected 2023 GDP Growth: ~3.4%
- ★ # of Reg'd Vehicles: ~ 20 Mil / 4.2%
5-yr CAGR
- Length of Toll Roads: > 1,000 km



Bangkok

Photo Credit: Full Suitcase

Sources:

CEIC Data, Department of Economic and Social Affairs of United Nations, Encyclopedia Britannica, IMF, State Information Center of China, United Nations Conference on Trade and Development, World Bank, World Trade Organization



• Thailand's ITS Plan

- ETC is one of the 6 elements
- Transitioning from DSRC to ISO 18000 6C & ANPR
- Committed to going to Multi Lane Free Flow in 2021
- POC started in 2022



Bangkok & Chiang Mai are amongst the most polluted cities in the world for air quality



Under Planning / Construction

- Bangkok's third outer ring road (19.25km)
- M2 / M3 / M4..... (>20 motorways / > 6,500km)



Thailand is ranked #
4 in number of road
deaths per 100K
inhabitants

Sources:

Bangkok Post Public Company Limited, Department of Highways of Thailand, Don Muang Tollway PLC, World Health Organization,



Vietnam

Profile

- ★ Population: 99 million
- Area: 331,690 km. sq.
- GDP (2021): ~ \$366 Bil
- ★ Projected 2023 GDP Growth: ~5.8%
- # of Reg'ed Vehicles (2023): ~ 5 Mil
- Length of Toll Roads: >650 km



Hanoi

Photo Credit: Timeout

Sources:

Department of Economic and Social Affairs of United Nations,,
Encyclopedia Britannica, IMF, Ministry of Transportation of Vietnam,
State Information Center of China, United Nations Conference on
Trade and Development, Viet Nam News, World Bank, World Trade
Organization

Vietnam

ETC Spreading across Vietnam

Installation completed in 2022





Vietnam Development



- Road network plan in a period of 2021 – 2030:
 - Use of ETC nationwide
 - Committed to Free Flow tolling
 - Transitioning from DSRC to 6C and ANPR
 - As of Jun 2022, ~ 65% vehicles (~3 Mil) are using e-tags
 - The MoT requires adoption to reach 80-90%
 - More expressways planned
 - By 2025: 2,542 km more
 - By 2030: 1,339 km more
 - By 2050 reaching > 9,000 km total length



India

Profile

Population: 1.4 Bil

Area: 3.3 Mil km. sq.

- ★ GDP (2021): ~ \$3.2 Tri
- ★ Projected 2023 GDP Growth: 6.0-6.4%
- ★ # of Reg'ed Vehicles (2019): ~ 295 Mil
- ★ Length of Toll Roads: ~75,000 km



Mumbai Sea Link

Photo Credit: Hindu Times

Sources:
Economic Surveys of India, Ministry of Road Transport & Highways

India

ETC Mandate in 2019

94% ETC Penetration

Getting ready for Free flow



The Government of
India to invest US\$35
Bil on roads in 2023

Source:
Ministry of Road Transport & Highways

Delhi - Mumbai Expressway

Photo Credit: Swarajya is by Kovai Media Private Ltd.



India Development



- Road network plan in a period of 2021 – 2025
 - Mandated the use of ETC nationwide
 - Free Flow tolling pilot projects implemented
 - 94% ETC Penetration (Stop & Go)
 - 64 Million ETC users 11 Million Transactions / day
 - More expressways planned
 - By 2025: 20,000 km of greenfield highways
 - 8,000 km of Greenfield expressways
- Tolling Revenue Growth
 - \$6+ Billion; doubled between 2015 & 2022 at
 - \$18 Billion revenue targeted by 2025



Positive Signs for the Tolling Industry

- ✓ Strong economic outlook
- ✓ Large population with growing income -> more vehicles
- ✓ Supporting government initiatives
 - Smart mobility
 - Improving road safety
 - Reducing congestion
 - Improving air quality
 - Further developing infrastructure to support socio-economic development



THANK YOU!

Eveline Mou

eveline.mou@star-int.net

General Manager, STAR Systems International Limited

IBTTA Webinar: Global Outlook on Post-Pandemic Toll Revenues