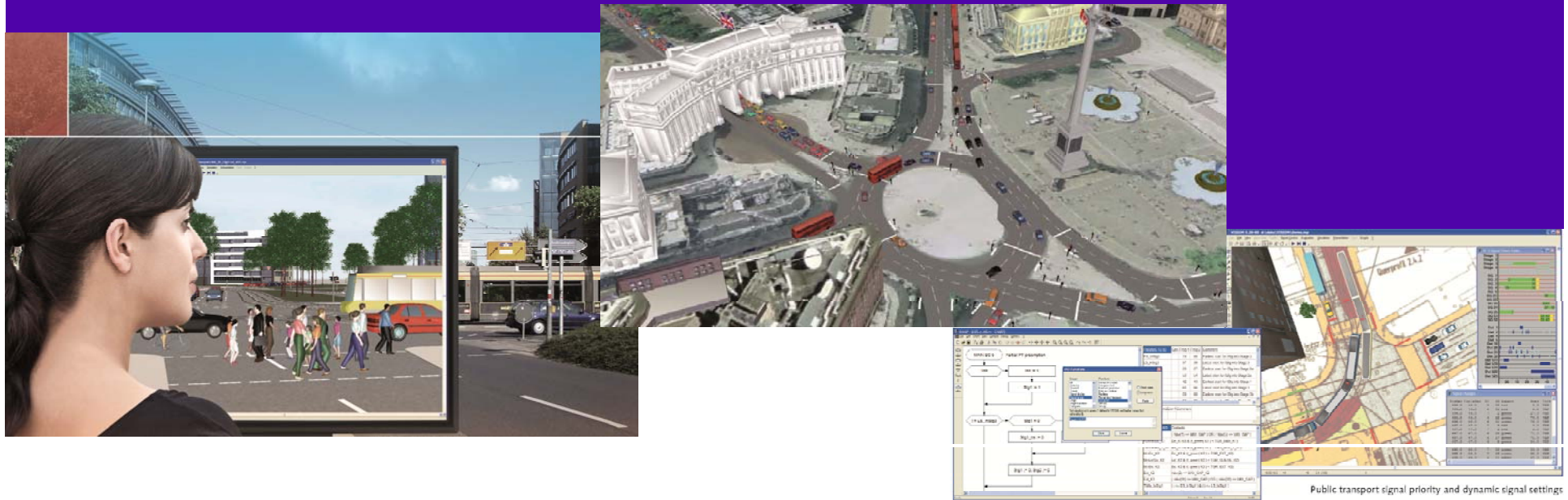


Traffic Micro Simulation -VISSIM



Systra MVA Consulting (India) Pvt. Ltd.
IUT MUMBAI CHAPTER MARCH 19, 2011

VISSIM- Introduction



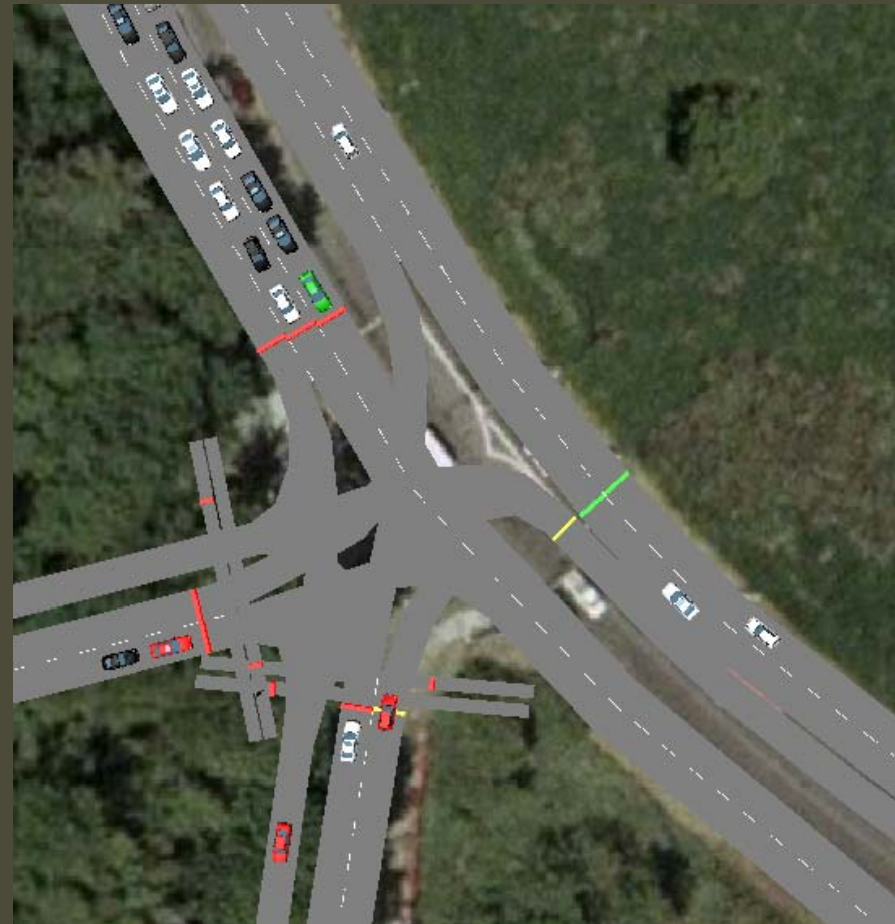
VISSIM Features

- Can model all modes
 - All types of Vehicles
 - Tram/Train/PT Lines
 - Pedestrians
 - Interaction between different modes

- Detailed analysis of Vehicle Network Performance
 - Service Time & Delay Analysis
 - Queue Lengths
 - Travel Times
 - Level of Service
 - Retrieval Time
 - Number of Toll booths required

Why Use VISSIM Micro Simulation

- Better representation of real life traffic
- Visual representation of performance in 3D
- Flexible geometry
- Better communication to Stakeholders
- Ability to examine efficiency of control systems
- Upstream /downstream queuing



Why Use VISSIM Micro Simulation

- Testing of ITS strategies
 - Variable message signs
 - Ramp metering
 - Transit Signal Priority,
 - Signal preemption
- Signal control testing
- Corridor alternatives analysis
- Ability to analyze control techniques that have not been implemented/ studied in detail elsewhere



Applications of VISSIM



Applications of VISSIM

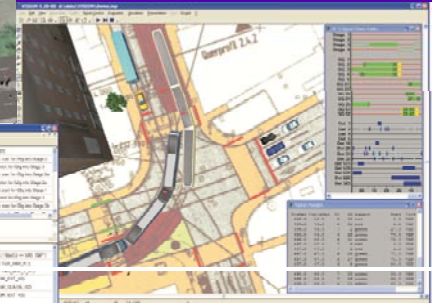
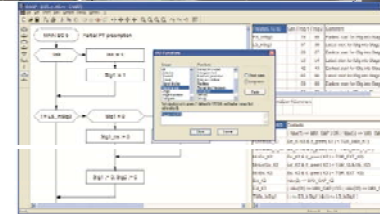
Applications span across

- Traffic Impact Assessment
- Parking Studies
- Pedestrian Studies
- Analysis of Drop Off/Pick Up areas
- Strategy at Security Check point
- Toll Plaza Evaluation
- Airport Landside Pedestrian and Vehicle Simulation

Applications of VISSIM

- Multi Model Interchanges
- Bus Rapid Transit Schemes
- Highway Traffic Management
- Wide Area Traffic Networks
- Logistic Hubs
- Station Interchanges
- Terminals and Depots
- Sensitivity Analysis

COMPARISON WITH PARAMICS



Public transport signal priority and dynamic signal settings

VISSIM vs. PARAMICS

- Many adjustable parameters
- Good 3D mode for simulation output
- Most suitable for simulating Indian driving behaviour / mixed flow conditions
- More flexibility in modeling
- More diversified in network detailing
- Compatibility with external tools

VISSIM vs. PARAMICS

	PARAMICS	VISSIM
Advantages	<ol style="list-style-type: none"> 1. Real roundabout function 2. Real curve function 3. Set of data files instead of a single file => more convenient to adjust parameter 4. Curb function allows to adjust the overlay to match real world network 	<ol style="list-style-type: none"> 1. Many adjustable parameters in the interfaces 2. Pedestrian definition 3. Definable and adjustable yield sign location 4. Good 3D mode for displaying simulation 5. Ability to define different lane width for one link 6. Ability to see the link length directly on the desktop
Disadvantages	<ol style="list-style-type: none"> 1. The interface is not as friendly as the other softwares 2. Unless correct sequence is followed, it takes time to adjust the curb. 3. The midline is corresponding to the curb 	<ol style="list-style-type: none"> 1. No real roundabout function 2. Difficult to draw a circle 3. Circular islands difficult to define 4. Turning must be defined as one lane to one lane between links

MVA Experience in VISSIM



MVA and MicroSim Projects

Extensive experience working on both Vehicular and Pedestrian Micro-Simulation Modeling all over Asia

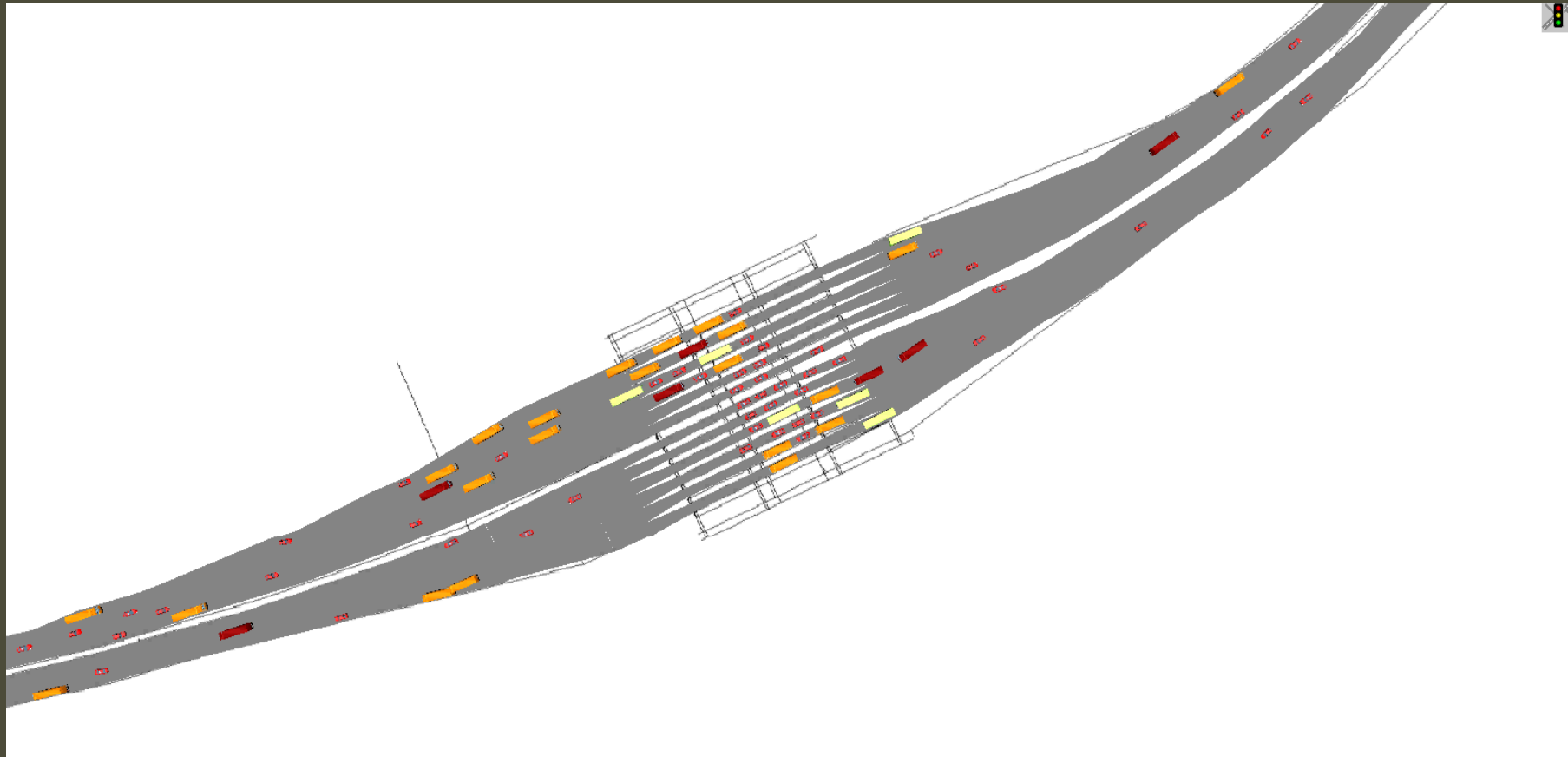
Software Packages Used

- PTV VISSIM
 - Most powerful, versatile and widely used MicroSim tool
 - Simulates most realistic driving and pedestrian behavior
- SIAS PARAMICS
 - Suitable for Highway Corridor Studies
- CUBE DYNASIM
 - From Citilabs, Partner company of MVA

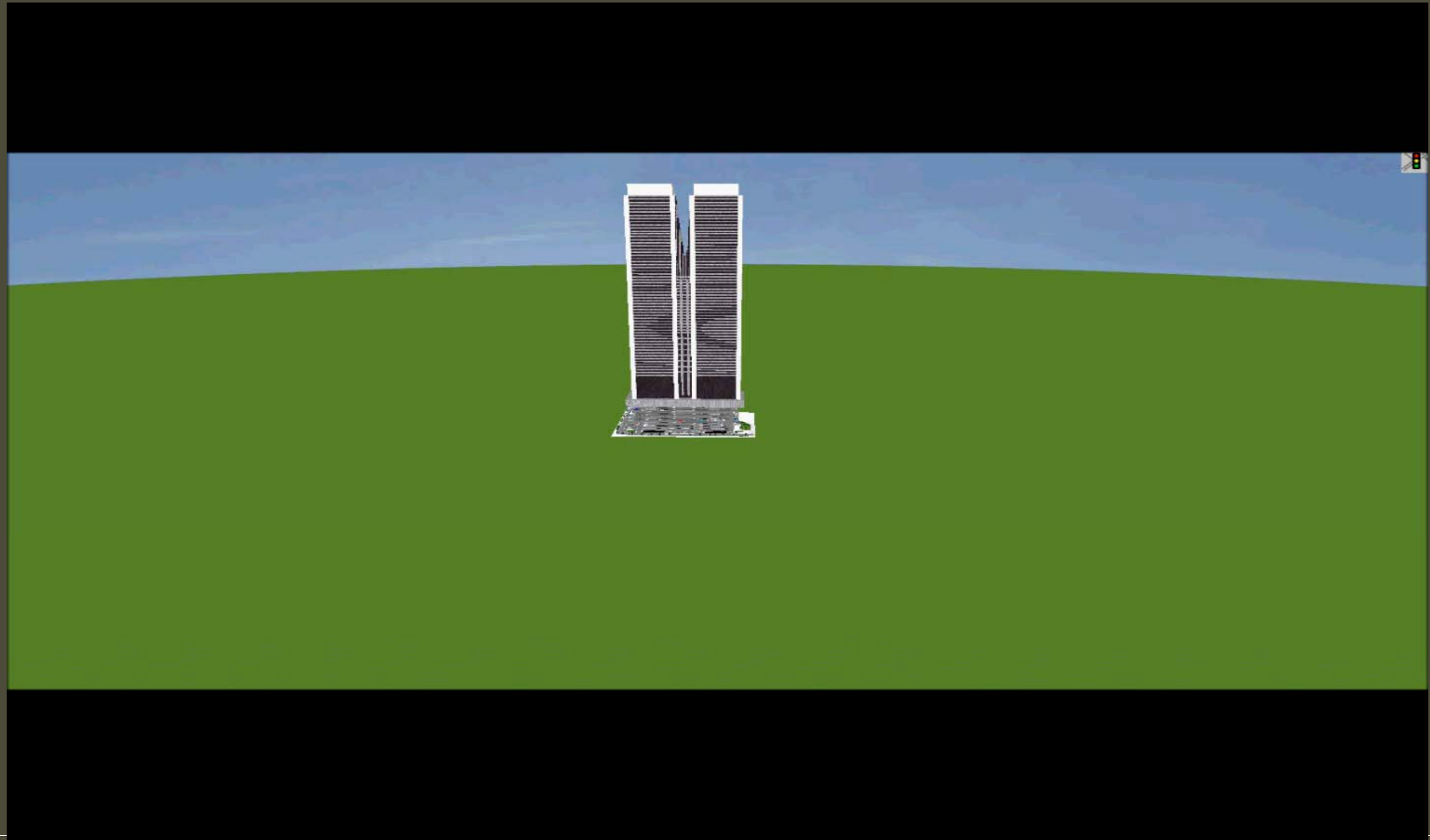
Case Study: Network Performance Analysis



Case Study: Toll Plaza



Case Study: Multi Storey Car Park



Case study: Queuing at Security Check Points



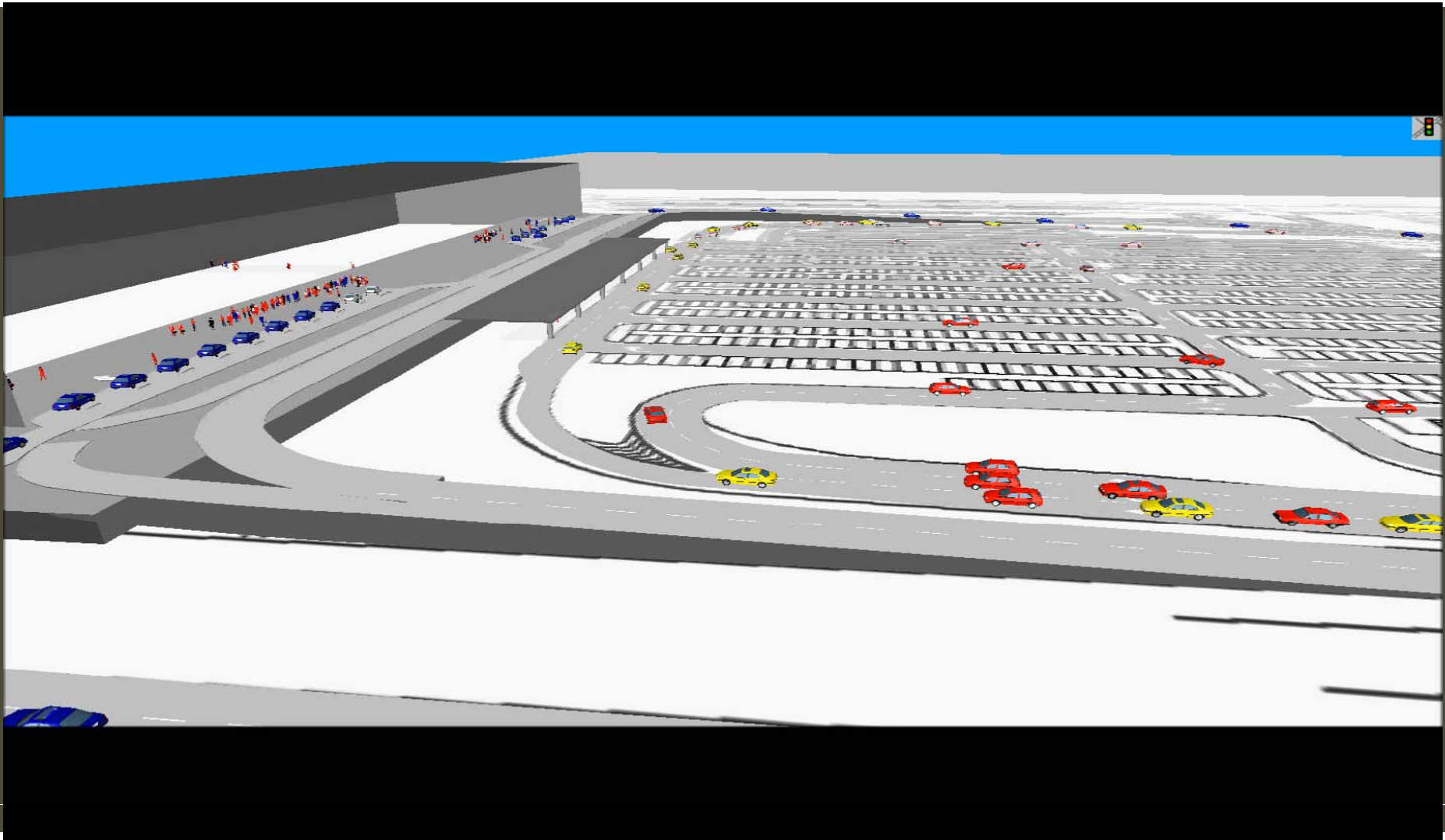
Case study: Queuing at Security Check Points



Case study: Multi-Modal



Case study: Airport Landside Circulation



Vissim Projects in India

- Bandra Worli Sea Link Traffic Dispersal Schemes
 - Client: **Reliance Infrastructure Ltd.**
 - VISSIM model was developed to analyze the impact of traffic growth on BWSL and to devise revised dispersal and traffic management schemes

Vissim Projects in India

- Hospitality District, **Delhi International Airport**
 - VISSIM model was developed to assess operational behavior of road network in and around Hospitality district as a part of Traffic Study.
 - Simulation of internal circulation, pick up/drop off areas and access/egress.

Vissim Projects in India


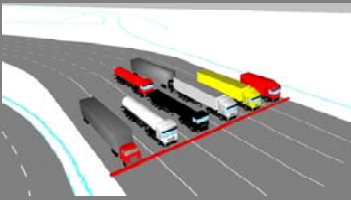

- Shamaldas Gandhi Flyover, Mumbai
 - VISSIM Model to assess the impacts of proposed flyover in the local road network
- India Tower, Mumbai
 - VISSIM Model to simulate internal circulation, pick up/drop off areas, access/egress.
- Kolkata Convention Centre, Kolkata
 - VISSIM Model to assess the impacts of proposed road network to the convention centre and to simulate internal circulation

Vissim Projects in India

- Delhi Convention Centre, New Delhi
 - VISSIM Model to assess the impacts of proposed road network to the convention centre and to simulate internal circulation.
- Annapoorna Film Studios
 - VISSIM Model to simulate internal circulation, pick up/drop off areas, access/egress

International VISSIM Projects

Hong Kong/Macau

Illustration	Project Title and Brief Descriptions	Software Used
	<p><u>West Kowloon Terminus</u> Visualisation and analysis of proposed traffic schemes including operation of internal and external traffic circulation, operation of taxi pick-up and drop-off, bus station and car park / good vehicle accesses.</p>	VISSIM
	<p><u>Hueng Yueng Wan Border Crossing</u> Testing and analysis of operation performance and capacity constraints of the proposed border crossing point during peak hour operation.</p>	VISSIM
	<p><u>Galaxy</u> Development of a VISSIM model to identify the traffic circulation and capacity of the proposed major resort in Cotai, Macau</p>	VISSIM

International VISSIM Projects Singapore



Sentosa Transport Study, Singapore

Comprehensive transport study to determine the existing and future travel characteristics of Sentosa Island and impacts of future development including pedestrian movements at proposed monorail stations

VISSIM /
VISPED



Comprehensive Transport Study for the National University of Singapore

Development of a model covering the entire Kent Ridge Campus road network in order to assess the major external / internal traffic junctions and public transport operations

VISSIM /
VISPED



Changi International Airport Terminal 1

Detailed simulation of all arrivals' traffic facilities, including car parks, taxi stands and private vehicle pick-up / drop-off. Testing of a number of taxi stand layout scenarios

VISSIM

International Micro-Simulation Projects Hong Kong/Macau



Proposed Logistic Center at Hoi Sing Road, Tsuen Wan

Development of a micro-simulation model to simulate the performance of the proposed access arrangement for the proposed Logistic Centre at Hoi Sing Road

S Paramics



Traffic and Transport Consultancy for Ponte 16 Development, Macau

Development of a micro-simulation model showing the proposed internal and external traffic arrangement for the proposed hotel/casino development at Macau

Dynasim



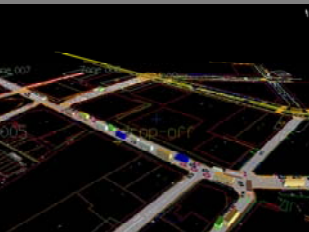


Yau Tong Bay Redevelopment- Micro-simulation Traffic Model

Development of a micro-simulation model showing the traffic conditions in the neighbourhood junctions with the proposed Yau Tong Bay Redevelopment

Dynasim

International Micro-Simulation Projects Hong Kong/Macau

	<p><u>Shenzhen Urban Traffic Management Study (2004)</u> Development of a micro-simulation model to simulate the performance of different identified improvement measures for Shen Nan Lu</p>	S Paramics
	<p><u>Wynn Resorts Macau</u> Development of a micro-simulation model showing the existing traffic condition in the vicinity of the proposed hotel/casino development at Macau and also using the model to simulate the recommended traffic arrangement/circulation for the proposed development</p>	S Paramics
	<p><u>Feasibility Study for Renovation of Landmark</u> Development of a micro-simulation model for the comparison of the different options of the traffic arrangement for the proposed drop-off layby on Queens Road Central by the development</p>	S Paramics

International Micro-Simulation Projects Hong Kong/Macau

	<p><u>Des Voeux Road Central Pedestrianisation Focus Study</u> Development of a micro-simulation model for the comparison of the existing condition and the with proposed pedestrianisation scenario in the Sheung Wan area</p>	S Paramics
	<p><u>Traffic Study for Pamela Youde Nethersole Eastern Hospital</u> Development of a micro-simulation model to illustrate the traffic arrangement for the identified short term and long term improvement options.</p>	S Paramics
	<p><u>STTL 470, Ho Tung Lau (Site A) Development, Sha Tin, N.T. Traffic Consultancy</u> Development of a micro-simulation model showing the surrounding road network for the proposed development and using the model to simulate the recommended improvement measures for the proposed development</p>	S Paramics

Thank You

SYSTRA MVA Consulting (India) Pvt. Ltd.

**B-307 Great Eastern
Summit
Sector-15, CBD Belapur
Navi Mumbai – 400 614
Tel. +91 22 2757 2745**

**206 Oberoi Chambers II
Off Link Road, Andheri
(W)
Mumbai – 400 053
Tel. +91 22 2674 3134**

**5/F Guru Angad Bhawan
71 Nehru Place
New Delhi – 110 019
Tel. + 91 11 2641 3310**



**Transportation, Planning &
Research Consultants**

