PTV GROUP
the mind of movement

USING INNOVATION SOLUTIONS TO INCREASE SUSTAINABLE MOBILITY AND EVALUATE TRANSPORTATION IMPACTS

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PTV VISTRO
the mind of movement

THE FUTURE OF MOBILITY

PTV GROUP
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PTV VISTRO

*VIS*ION *TRA*FFIX + *O*PTIMIZATION

Name, Title
Date

WHAT DOES VISTRO OFFER?

Vistro is an All-in-One Software…

- Intersection Level of Service
  - Variety of Validated Industry Methods
  - "Clear Box"
- Robust Signal Timing Optimization
  - Local Optimization
  - Network Optimization
- Fully Integrated Traffic Impact Analysis
  - Trip Generation
  - Trip Distribution
  - Manual Trip Assignment

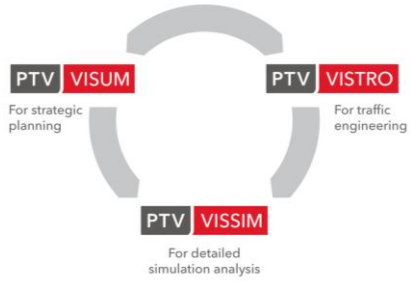
… Plus More!

- True Scenario Management
  - Base Scenario
  - Unlimited additional scenarios
  - All in a single file
- Mitigation Analysis Options
  - Compare Options to Do-Nothing
- Most Comprehensive Reporting
  - On-screen Visual Output
  - Quantitative Tabular Output
  - Automatic Figures

And…

EVOLUTION OF PTV VISTRO

HOW DOES VISTRO FIT INTO THE VISION TRAFFIC SUITE?



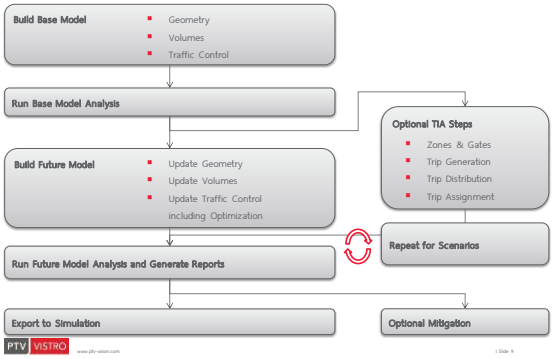
PTV VISTRO USE CASES 1

- **Conducting Traffic Impact Analyses (TIA): Evaluate the impacts of proposed future developments on the transportation network**
  - trip generation, distribution, and assignment of development traffic
  - multiple scenario management
  - mitigation testing and evaluation
  - comprehensive, report-ready tables and figures
  - preview future development traffic with the integrated PTV Vissim viewer
- **Developing Transportation Master Plans: Transportation Master Plans can be quickly developed through**
  - efficient data entry and storage
  - integration with PTV Visum for incorporation of long-range forecasting data

PTV VISTRO USE CASES 2

- **Conducting Signal Timing and System Evaluations: PTV Vistro expedites the analysis of signal systems operations and re-timing studies**
  - intersection, corridor, and network optimization
  - seamless transition to PTV Vissim for micro simulation
- **Performing Corridor Studies: Use PTV Vistro for quick and easy analysis of corridors, including**
  - re-design of facilities
  - identifying proper traffic control devices
  - evaluating future mitigation needs

TYPICAL WORKFLOW



TYPICAL WORKFLOW BUILDING THE MODEL

- **Based on Background Images**
  - BING
  - Image Files
- **Automation: Network Model Import**
  - Visum
  - ANM
  - Synchro
- **Traffic Counts**
  - Copy & Paste

TYPICAL VISTRO WORKFLOW

Obtain Data

Build Base Network Model

- Geometry
- Volumes
- Traffic Control

Run Base Network Analysis and Generate Output

Generate Future Model

- Update Geometry
- Update Volumes
- Update Traffic Control
  - Traffic Control Changes
  - Signal Timing Updates, including Optimization

Run Future Model Analysis and Generate Output

Repeat for Scenarios

(Export to Simulation)

INTERSECTION ANALYSIS

Four Control Types

Multiple Analysis Methodologies

- HCM 2010
- HCM 2000
- Kimber (Roundabout)
- Critical Movement (Circular 212 / ICU)

A “Clear Box” Concept Software

- Detailed Parameter Sets for Capacity Analysis

Different Methodologies within the Same Network

Signal Warrant Analysis (Volume-Based)

TRAFFIC IMPACT ANALYSIS (TIA) FUNCTIONALITY

Network Component for TIA

- (Zone), (Gate), (Path)

Trip Generation

- Trip Generation Manual or Custom Trip Generation Data (e.g. OTISS Import)
- One-Click Land Use Updates
- Multiple Zones for Redevelopment or Mixed Use Development Cases
- Negative Trip Generation

Volume Adjustment

- In-process / Approved, Diverted, Pass-by, etc.

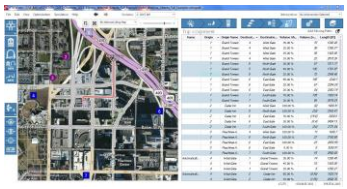
TRAFFIC IMPACT ANALYSIS (TIA) FUNCTIONALITY

Trip Distribution

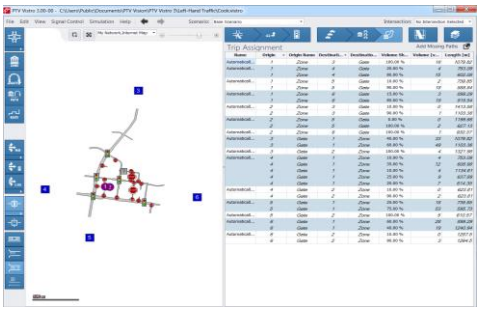
- Tabular Input To / From Development Zones
- Mirror Trips (From / To Trips)

Trip Assignment

- Shortest Path Search
- Manual Input for Paths
- Visual Display of Paths
- Automatic Error Check

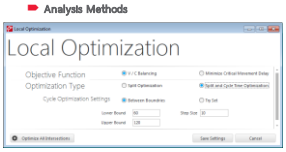


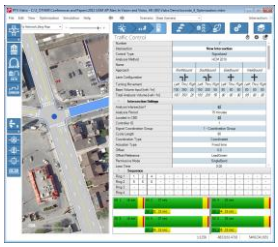
TYPICAL VISTRO WORKFLOW



TYPICAL WORKFLOW LOCAL SIGNAL OPTIMIZATION

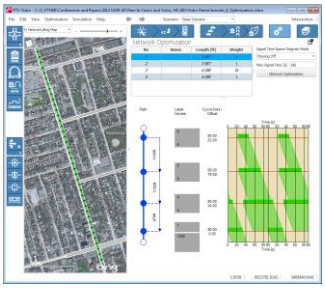
- **Optimization Parameters**
  - Splits
  - Cycle Length
- **Objective Functions**
  - Balance V/C
  - Minimize Critical Delay
- **Analysis Methods**





TYPICAL WORKFLOW NETWORK SIGNAL OPTIMIZATION

- **Optimization Parameters**
  - Offsets, Splits, Cycle Length, Lead/Lagging Left Turns
- **Optimization Methods**
  - Hill Climbing
  - Genetic Algorithm
- **Objective Functions**
  - Weighted Sum of Delay and Number of Stops
- **Platoon dispersion model**
- **Corridors**
  - To give weights
  - Time Space Diagram



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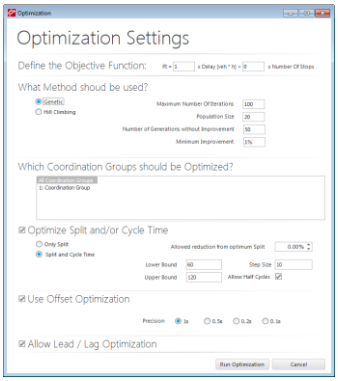
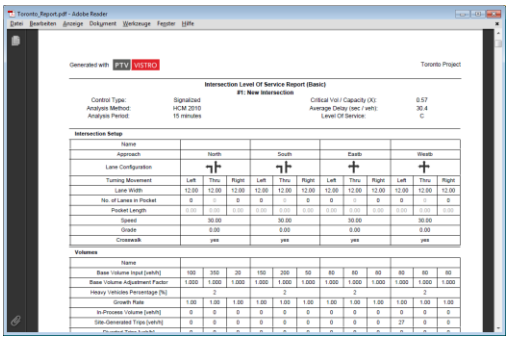


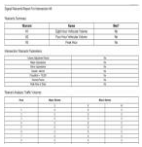
TYPICAL WORKFLOW REPORTING

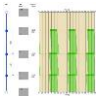
- **Tables**
  - Intersection Summaries
  - Detailed Intersection Analysis (HCM)
- **Figures**
  - Turning Volumes (with options for various volume types)
  - LOS Summary by Intersection
  - Geometry and Traffic Control
  - Time Space Diagram
- **Formats**
  - PDF, (Excel, CSV, HML)

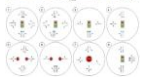
TYPICAL WORKFLOW REPORTING



VISTRO REPORTING







Quantitative Reports

- Network Summaries
  - Analysis Summary
  - Trip Generation / Distribution
  - Volume Summary
- Intersection Analysis Report
- PDF, HTML, csv

Graphical Reports

- Turning Volumes (with options for various volume types)
- Turning Volume Percentage by Zone (Fair Share)
- Link Volume Percentage Distribution (Zone – Gate)
- LOS Summary by Intersection
- Geometry

VISTRO ADDITIONAL FEATURES

Mitigation Analysis Parameters

- Compare Mitigation Strategies for Intersections
- Geometry / Lane Configuration
- Traffic Control

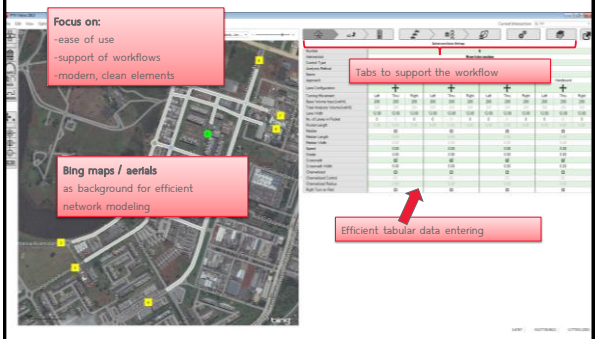
Scenario Management

- Various analysis hours, years
- Various Network configurations
- All in one project setup

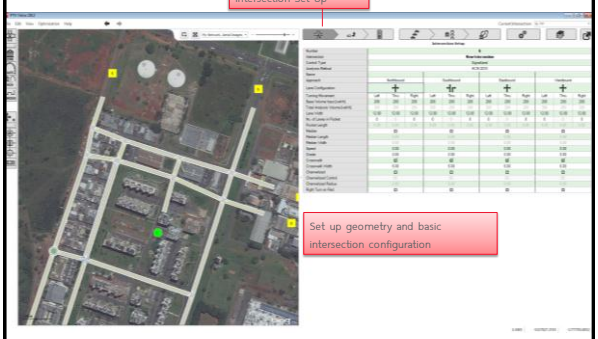
Data Import / Export

- Visum
- Vissim
- Synchro

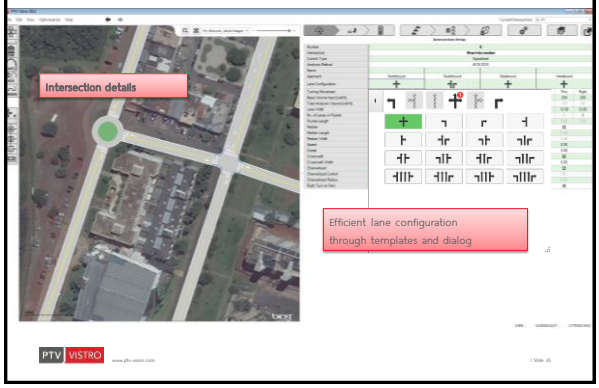
PTV VISTRO GUI: COMPLETELY NEW INTERFACE



PTV VISTRO GUI



PTV VISTRO GUI: SOME NICE DETAILS ...



PTV VISTRO GUI

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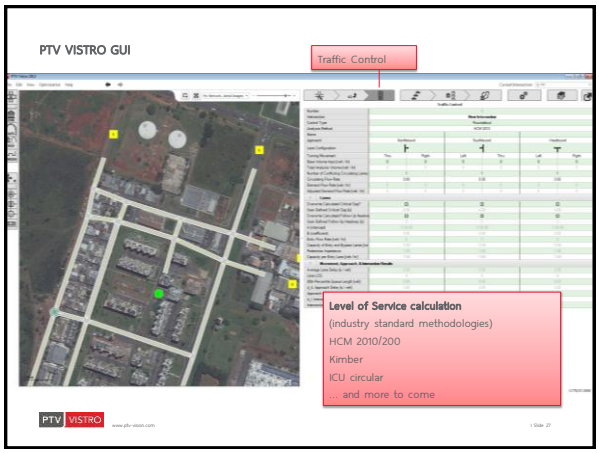


PTV VISTRO GUI

PTV VISTRO GUI

1. Trip Generation

Generate Trips ...
by entering
- Trip generation rate
- Quantity

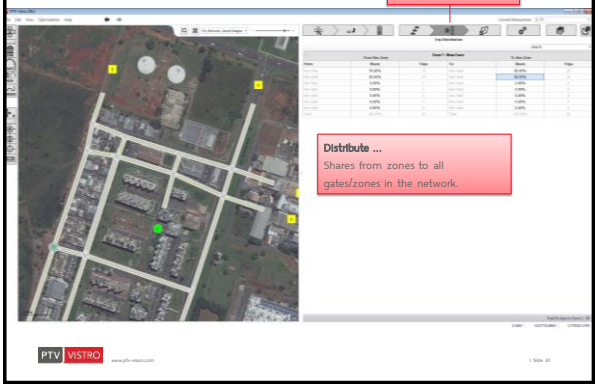
or by directly entering the number of generates trips.

Additional information by zone:
- Land use code
- Name

...

PTV VISTRO GUI

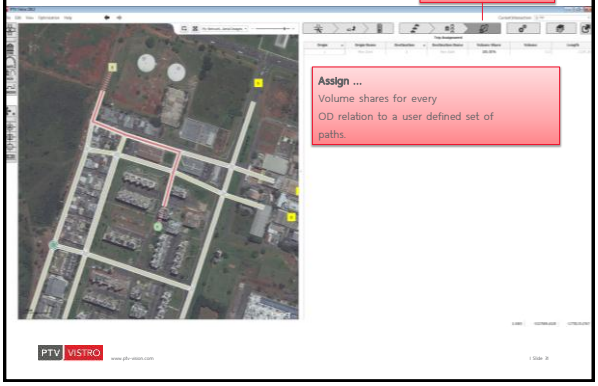
2. Trip Distribution



Distribute ...
Shares from zones to all gates/zones in the network.

PTV VISTRO GUI

3. Trip Assignment



Assign ...
Volume shares for every OD relation to a user defined set of paths.

PTV VISTRO GUI

Signal Optimisation

Assign weights to corridors

Network wide signal optimisation

Display time space diagrams for selected corridors

PTV VISTRO GUI

WHEN TO USE VISTRO

Regional and Citywide Strategic Planning	Visum
Large-scale Traffic Studies, Small-scale Plans	
Localized Operations, Traffic Impact Analyses / Studies for Improvement Identification	Vistro
Detailed Operational Analysis / Design Analysis	Vissim