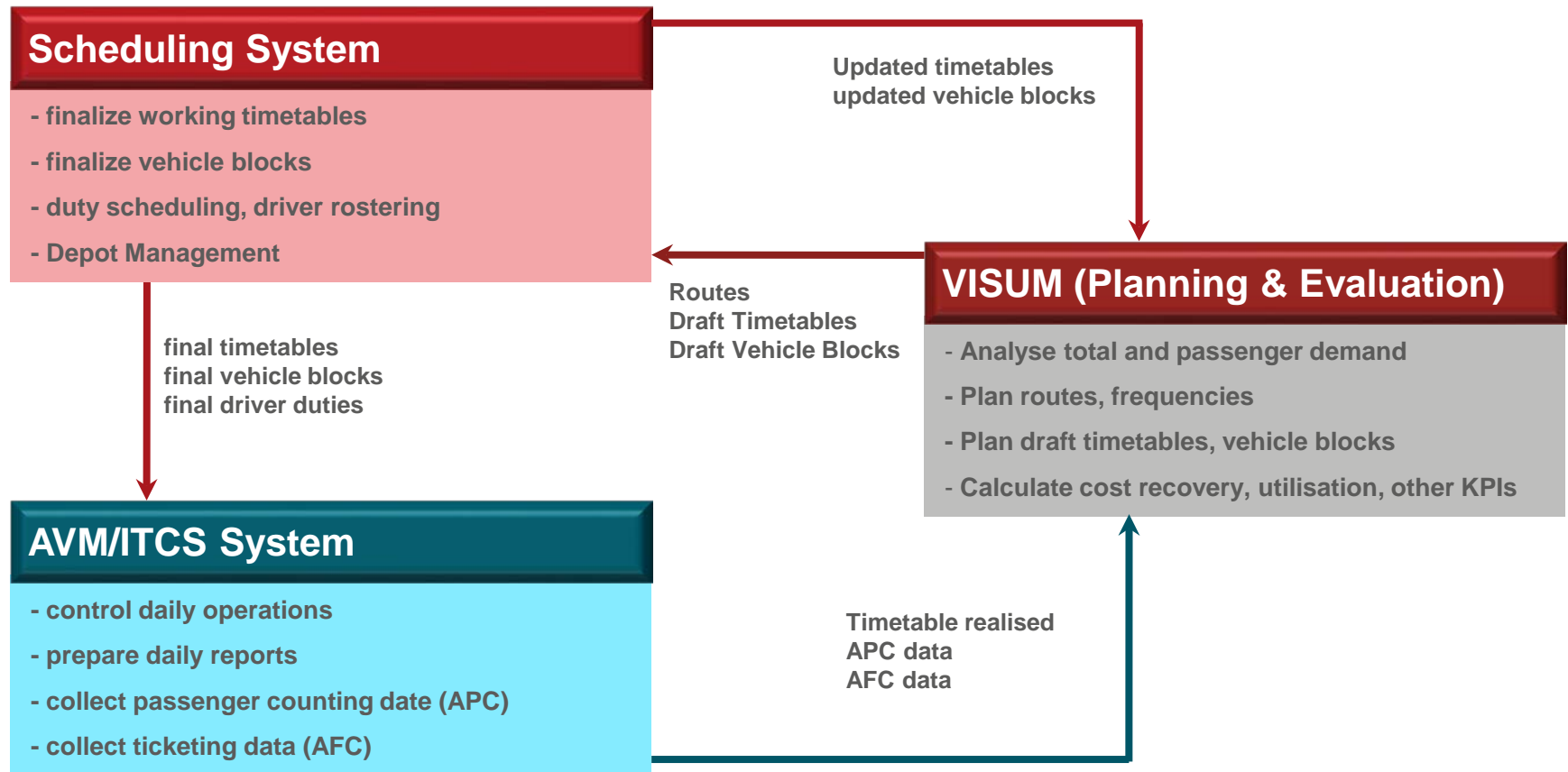


ADVANCED TECHNOLOGICAL DEVELOPMENTS
STRATEGIC PUBLIC TRANSPORT PLANNING
FOR NOW AND THE FUTURE

PTV VISUM PUBLIC TRANSPORT

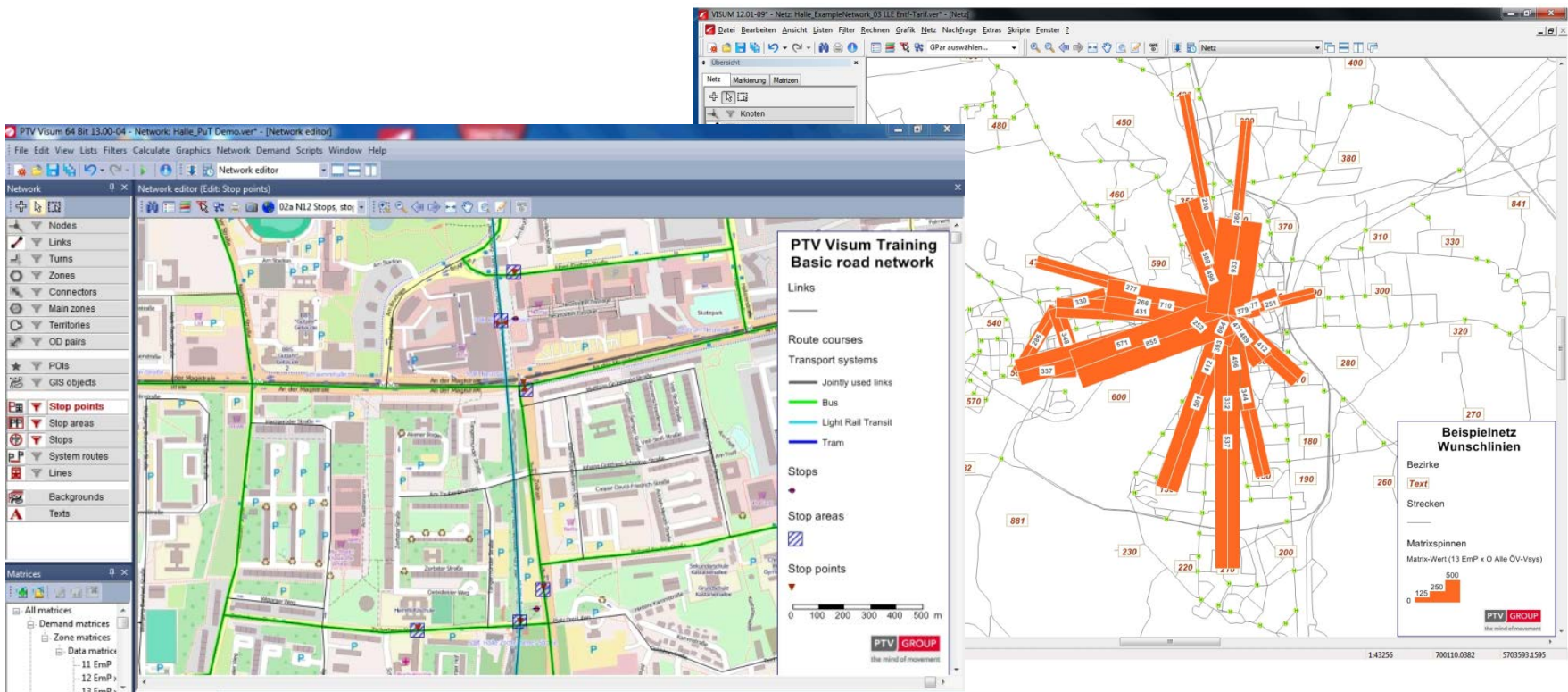
VISUM COMPLEMENTS YOUR SOFTWARE TOOL BOX

Comprehensive data structure and interfaces are basis for successful cooperation



PTV VISUM PUBLIC TRANSPORT ANALYSE SUPPLY AND DEMAND

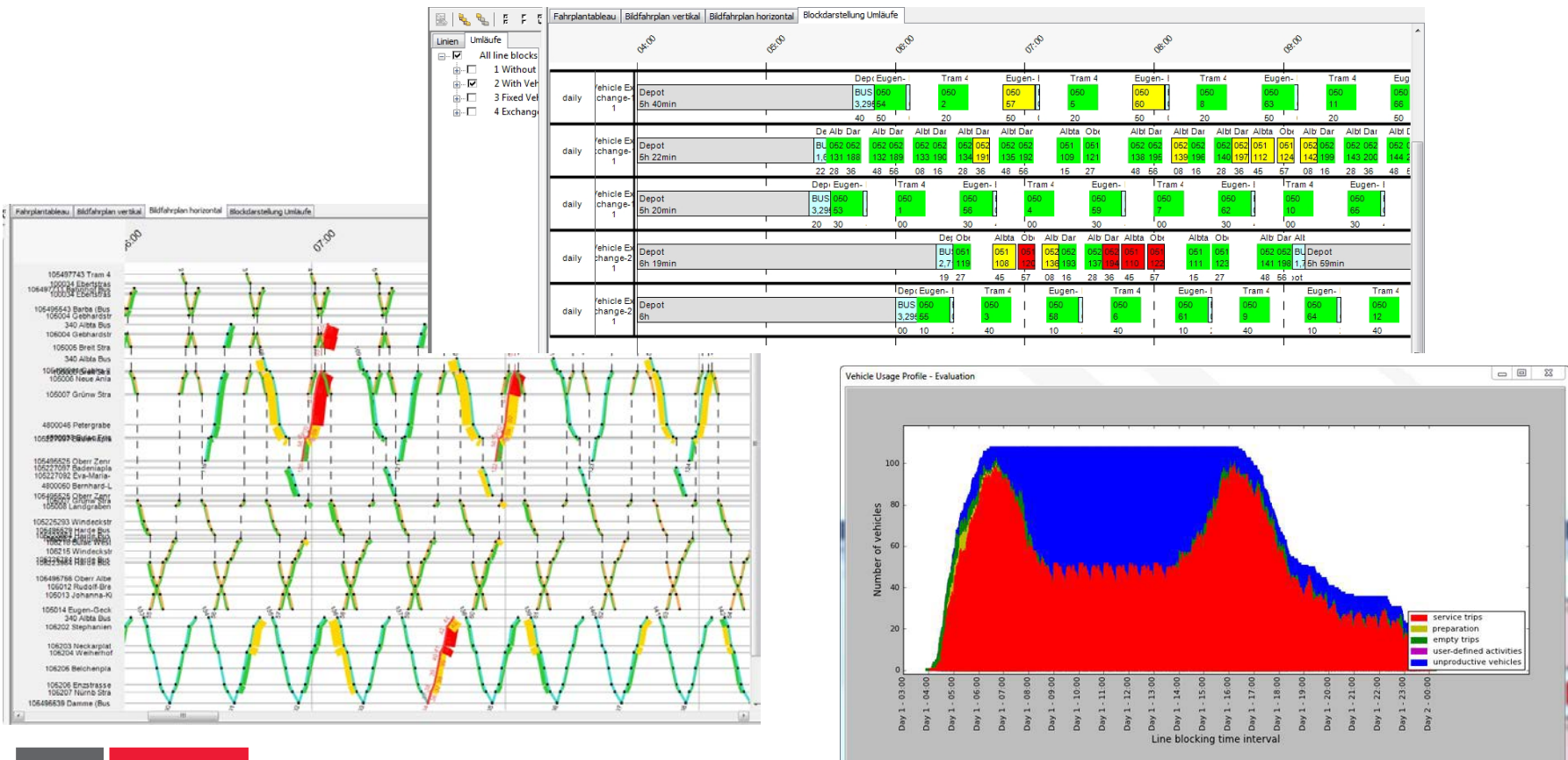
- Supply includes network, line routes and timetable
- Demand: simple counts or Origin–Destination matrices



PTV VISUM PUBLIC TRANSPORT

HOW MANY VEHICLES OF WHAT TYPE ARE REQUIRED?

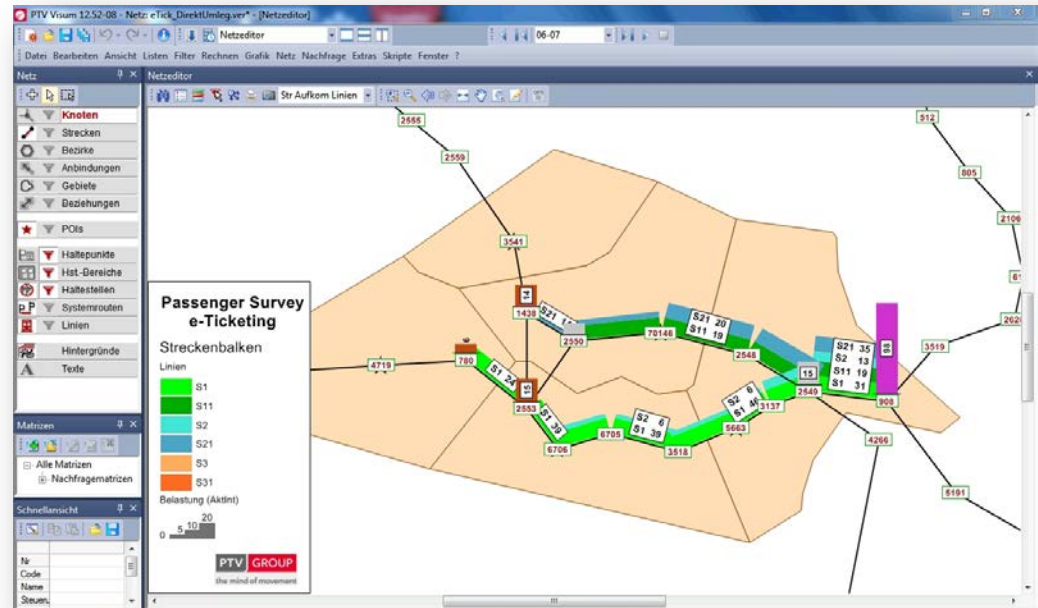
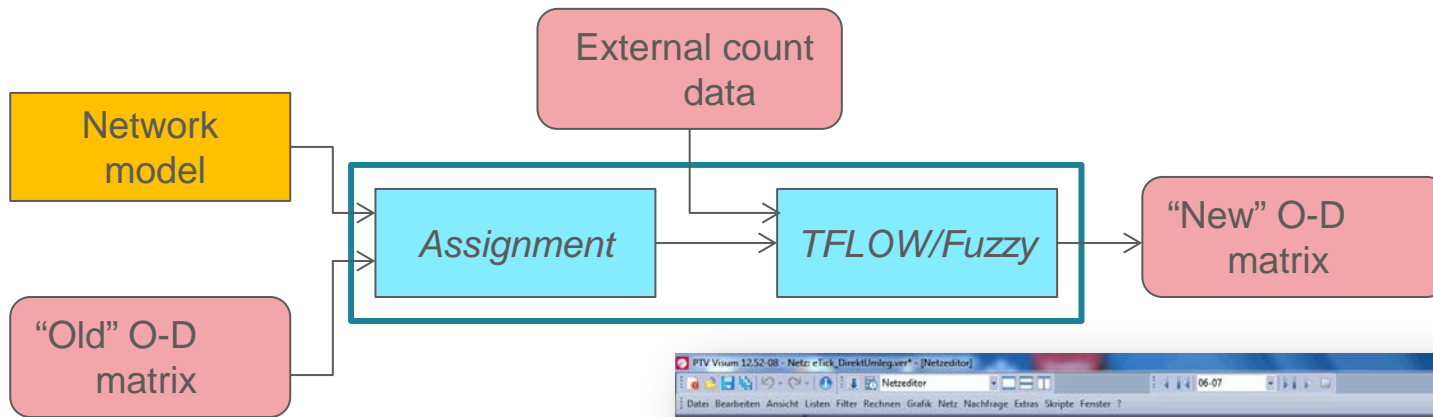
Algorithms to assess rolling stock requirements take into account sets of exchangeable vehicle types and the passenger volume



PTV VISUM PUBLIC TRANSPORT

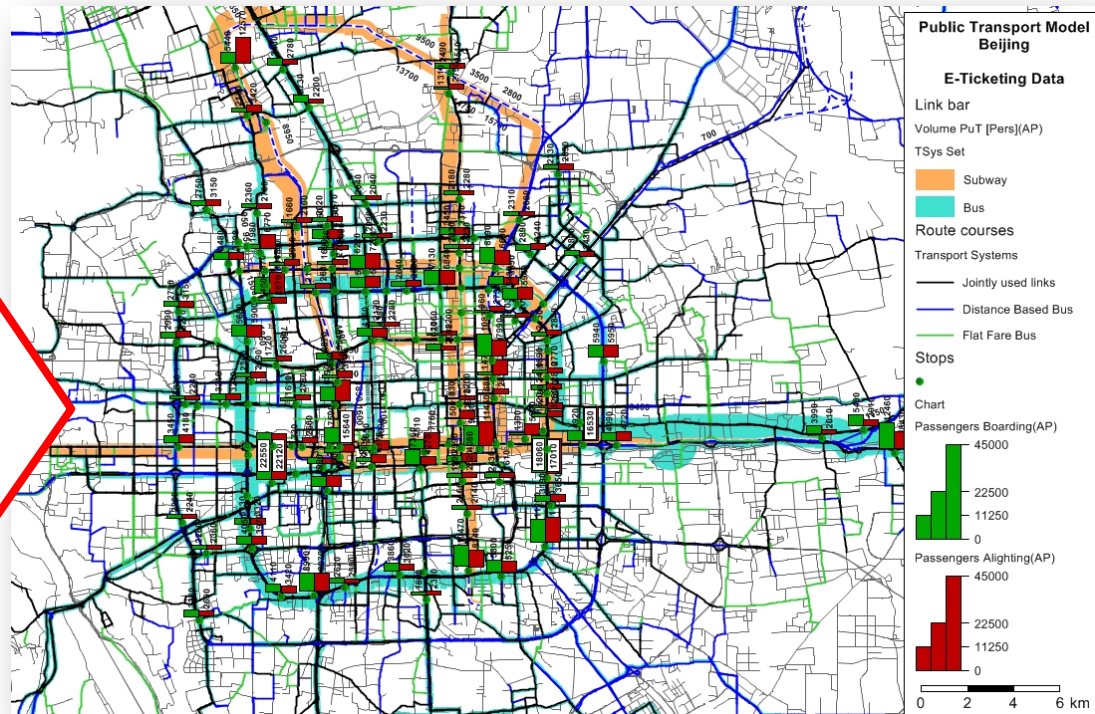
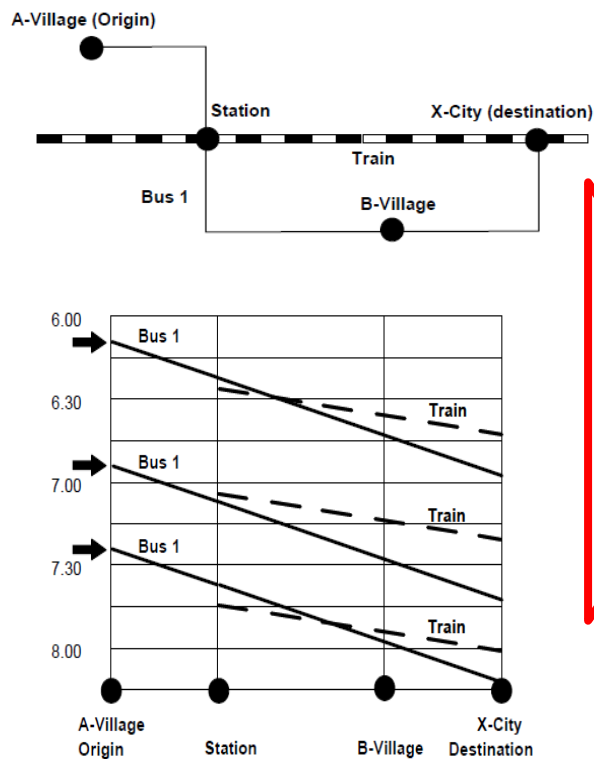
HOW TO GET INFORMATION ON PASSENGER DEMAND?

- Direct import of Check-in, Check-out information
- Estimating matrices, based on Check-in only



PTV VISUM PUBLIC TRANSPORT ASSIGNMENT MEANS COMBINING SUPPLY AND DEMAND

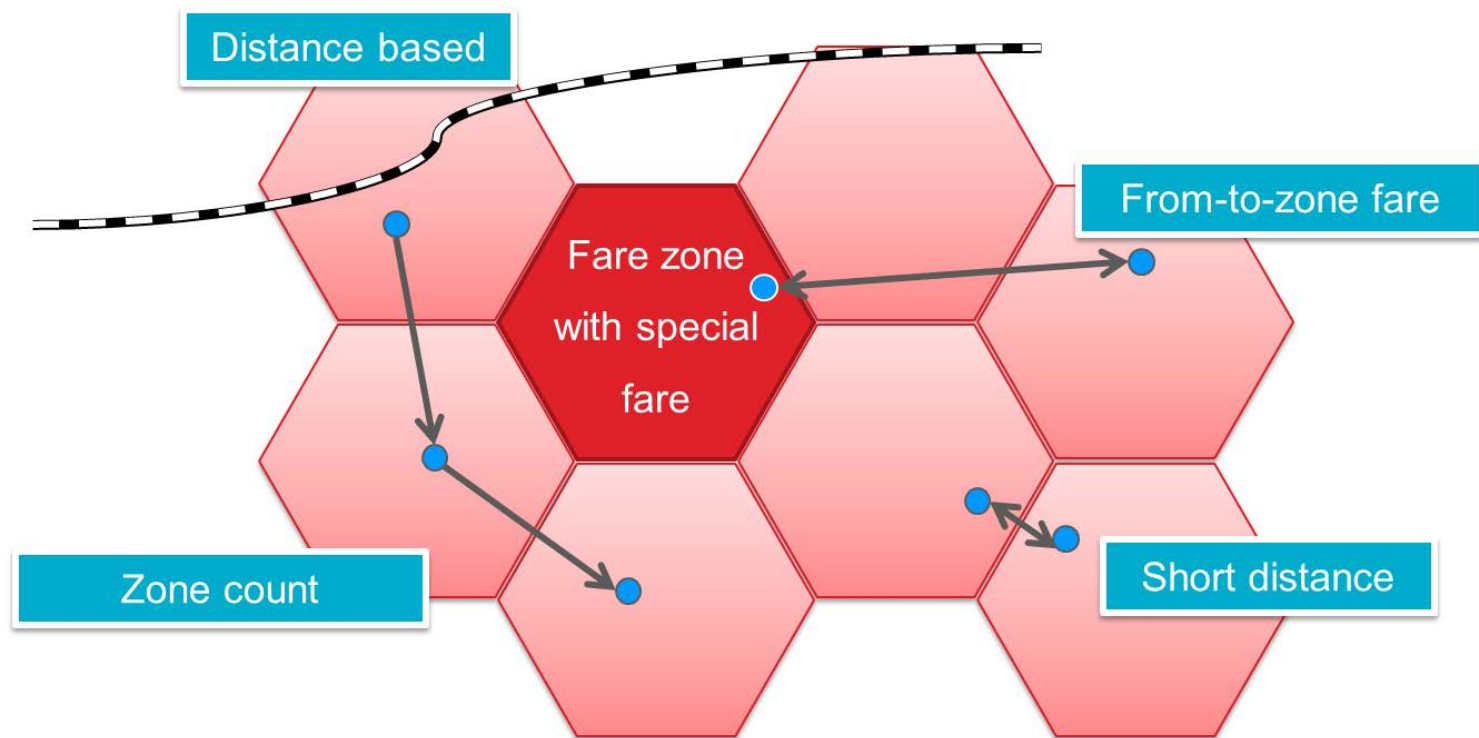
- Simulating passenger flows results in passenger volume and volume capacity ratio



PTV VISUM PUBLIC TRANSPORT

HOW TO ESTIMATE FARE REVENUE AND IMPACTS OF FARE STRUCTURE?

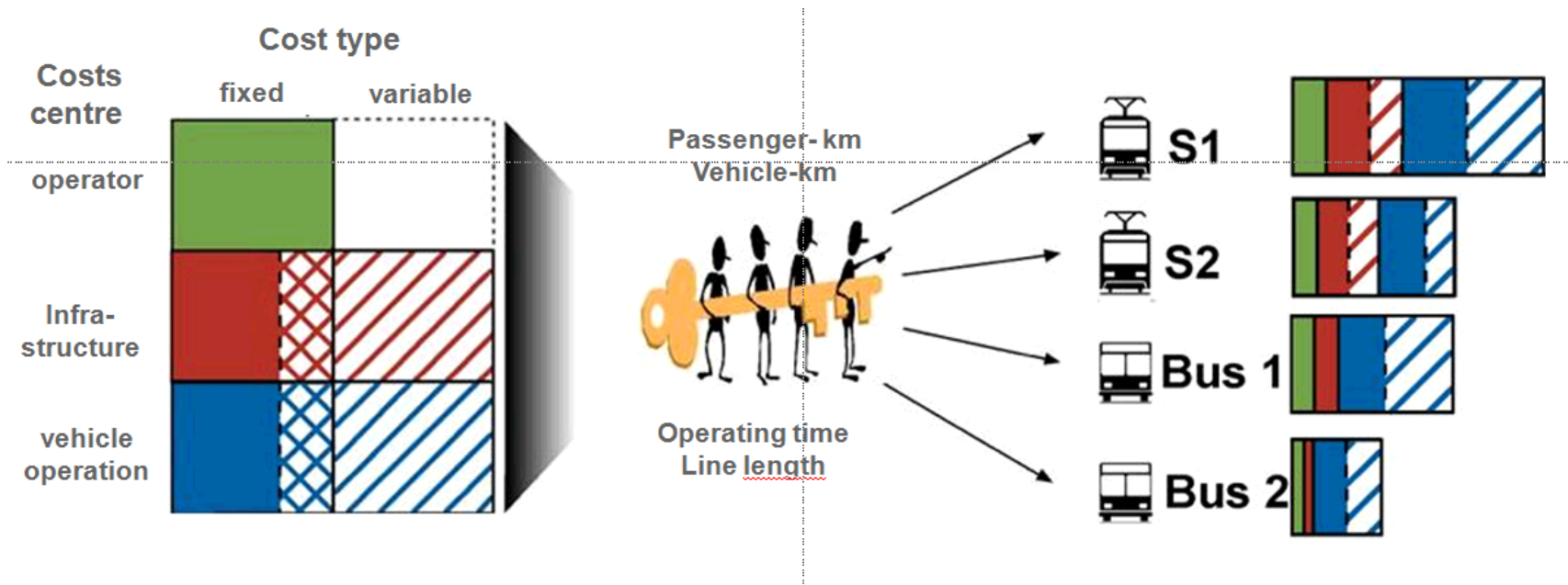
Detailed representation of fare systems allows for estimating fare revenue and taking into account impacts of tariff on route choice.



PTV VISUM PUBLIC TRANSPORT

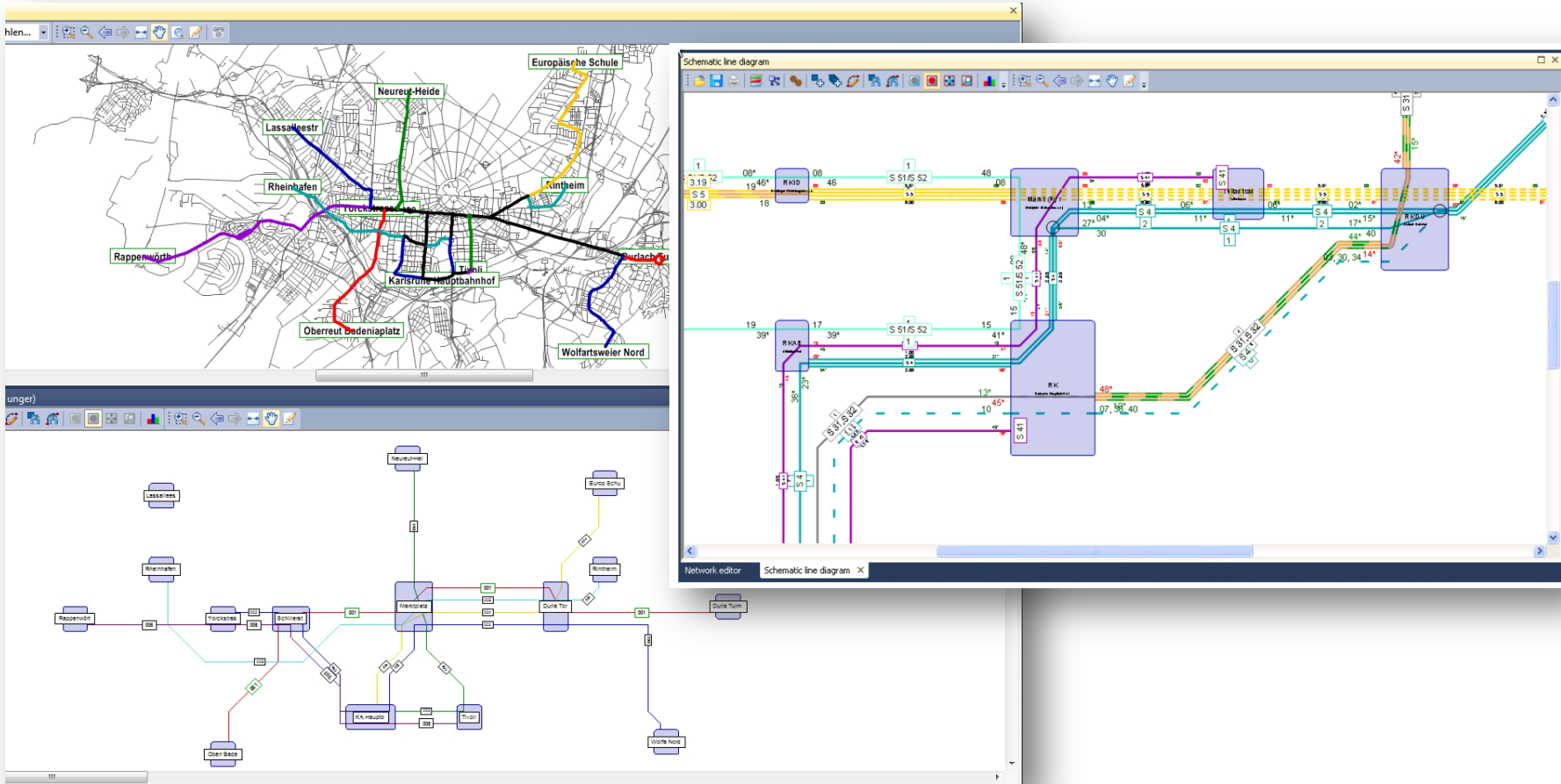
COMPARING FARE REVENUE AND COSTS PER LINE

PTV Visum offers procedures to estimate fair-box revenues as well as costs allocation at route level leading to highly disaggregated analysis of costs recovery



PTV VISUM PUBLIC TRANSPORT HOW TO PRESENT THE NETWORK?

Schematic line diagram to support planner and to inform passenger



PTV VISWALK

WHAT IS PEDESTRIAN ENGINEERING?

It is the discipline that focuses on the most prevalent mode of transport – walking

It is used to:

- > plan for pedestrians (inside and outside stations and buildings)
- > evaluate planning alternatives
- > plan operations
- > simulate evacuations
- > determine travel times
- > create 3D-simulations



PTV VISWALK

WHAT IS PEDESTRIAN MICRO-SIMULATION?

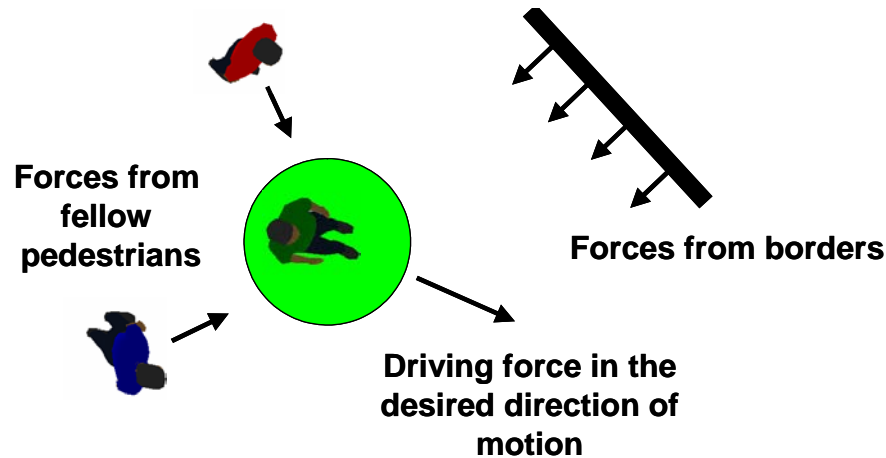
- > The accurate simulated representation of people walking - every step
- > Simulation of the interaction of pedestrians in crowds
- > Simulation of the interaction between pedestrians and the built environment
- > The accurate simulation of the interaction between pedestrians and private or public modes of transport



PTV VISWALK

THE SOCIAL FORCE MODEL

- The force on a pedestrian is calculated at a specific time from the influences of their desire, other pedestrians and the built environment such as walls or buildings.

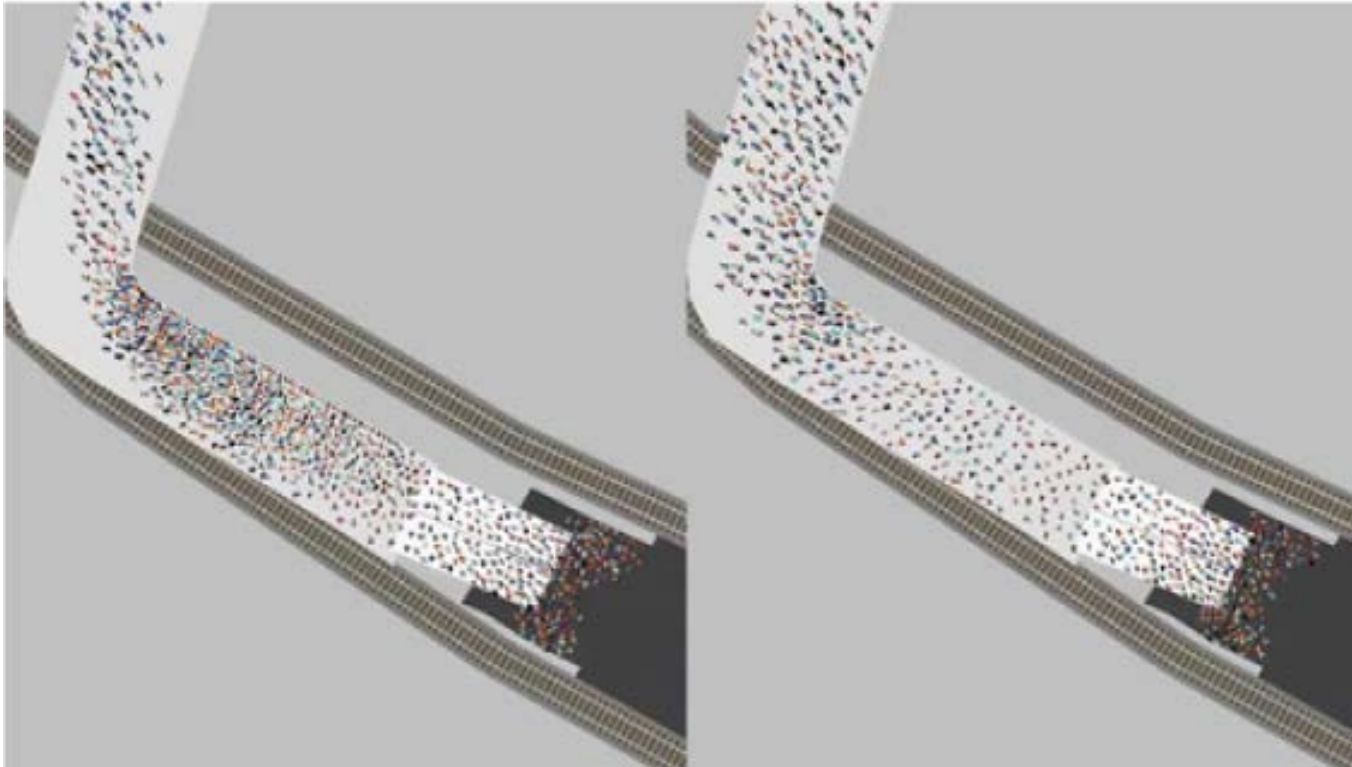


Ammendments

- PTV ammended the Social Force Model with additional functionality to enable modelling:
 - Movement through multi-storey buildings,
 - Crossing streets (with or without regulation)
 - Board and alight from trains,
 - Queue in elaborate queuing systems,
 - Bi-directional movement through an extended but narrow corridors

Dynamic Potential

- This PTV extension of the Social Force Model is not for a specific situation, but applies generally. The basic idea is to change from a shortest path to a earliest arrival movement paradigm.



PTV VISWALK

RAILWAY AND METRO STATION DESIGN AND OPERATIONS

Existing stations:

- > capacity planning
- > operational optimisation
- > passenger routing
- > evacuation analysis
- > retail placement
- > signage placement

New building stations:

- > capacity planning
- > design layout optimization
- > evacuation analysis

TIP of the Day!

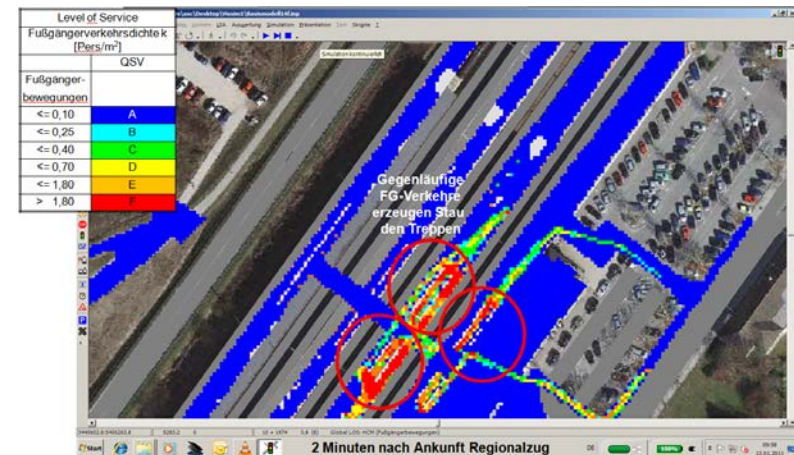
Vertical circulation systems (stairs, escalators & lifts) tend to be the key pinch-point in most overcapacity station designs or real-life situations!

Rail and Metro interchange with:

- > Other rail services
- > Buses
- > Taxi
- > Walking
- > Cycling
- > Private car

Output:

- > Journey times
- > Interchange times
- > Levels of density
- > Queuing times and densities
- > Routing analysis
- > 3D videos



PTV VISWALK SUCCESS STORY

North Melbourne Station, Australia:

Planning and design of passenger interchanges

Client: Department of Transport, Victoria, Australia

Objective: Investigation of issues of rail passenger's operational landscape at a major rail interchange within the Melbourne metropolitan system.



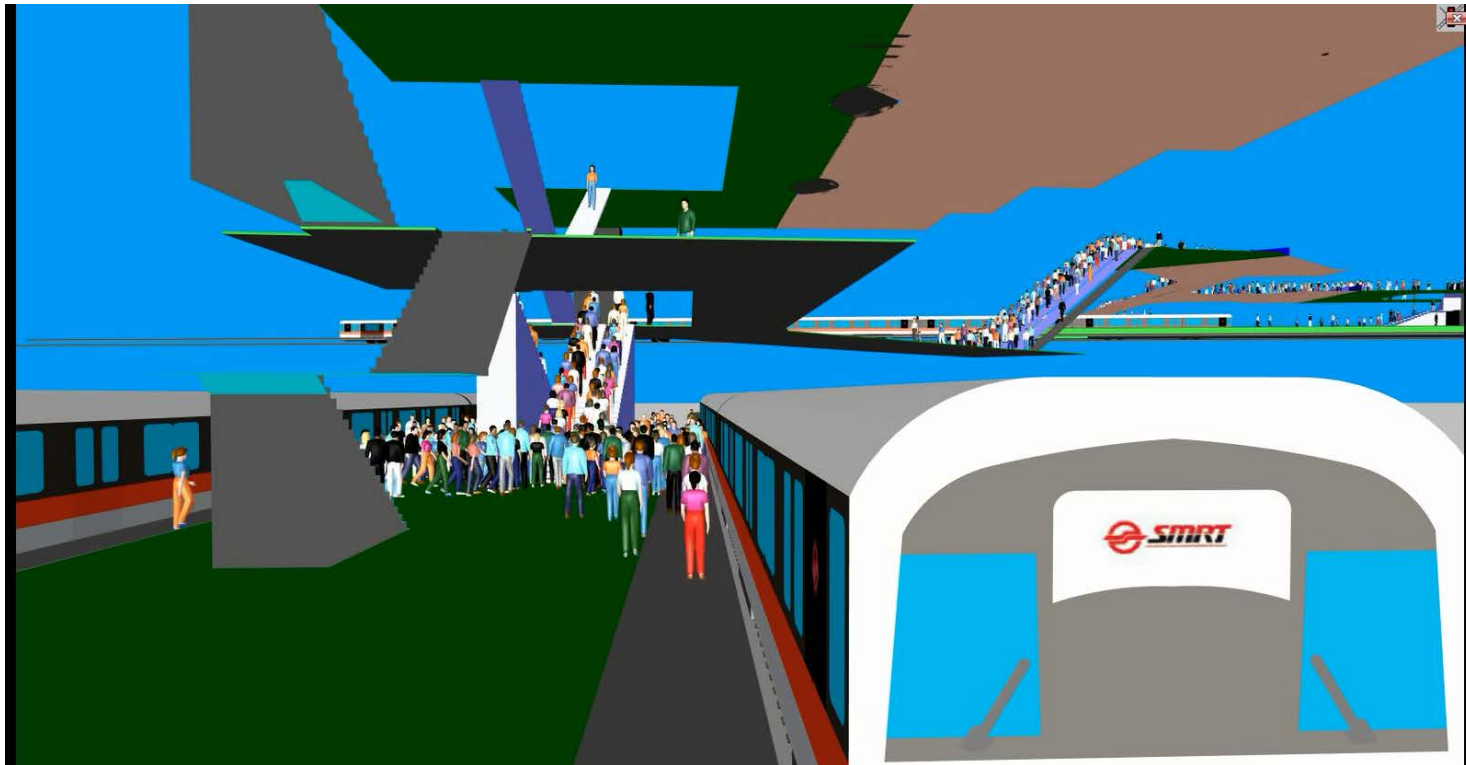
SUCCESS STORY

Newton Station, Singapore:

Pedestrian simulation of traffic flow at the Newton Station

Client: Singapore Land Transport Authority

Objective: Design review and evaluation of Level of Service against an existing elevated LRT station





the mind of movement