

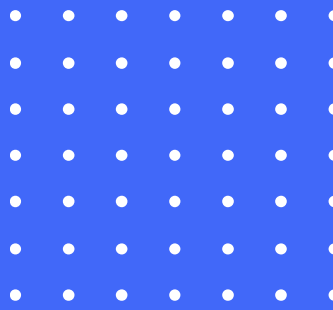
PTV GROUP

PTV'S JOURNEY WITH BING MAPS FOR ENTERPRISE



Andreas Lehr
07.06.2023
Schiphol

AGENDA



01

PTV – Who are we?

02

Geospatial Data at PTV

03

Data as a Service (DaaS)

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06

Bing Maps in PTV Products

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Outlook

01



PTV – WHO ARE WE?

An overview

Empowering
transportation and
mobility
–
for a cleaner and
smarter future.



Founded in 1979

– spin-off of Karlsruhe Institute of Technology



Colleagues

– ~900 worldwide



Global presence

– with 28 locations on all continents



Headquarter

– in Karlsruhe, Germany



Active customers

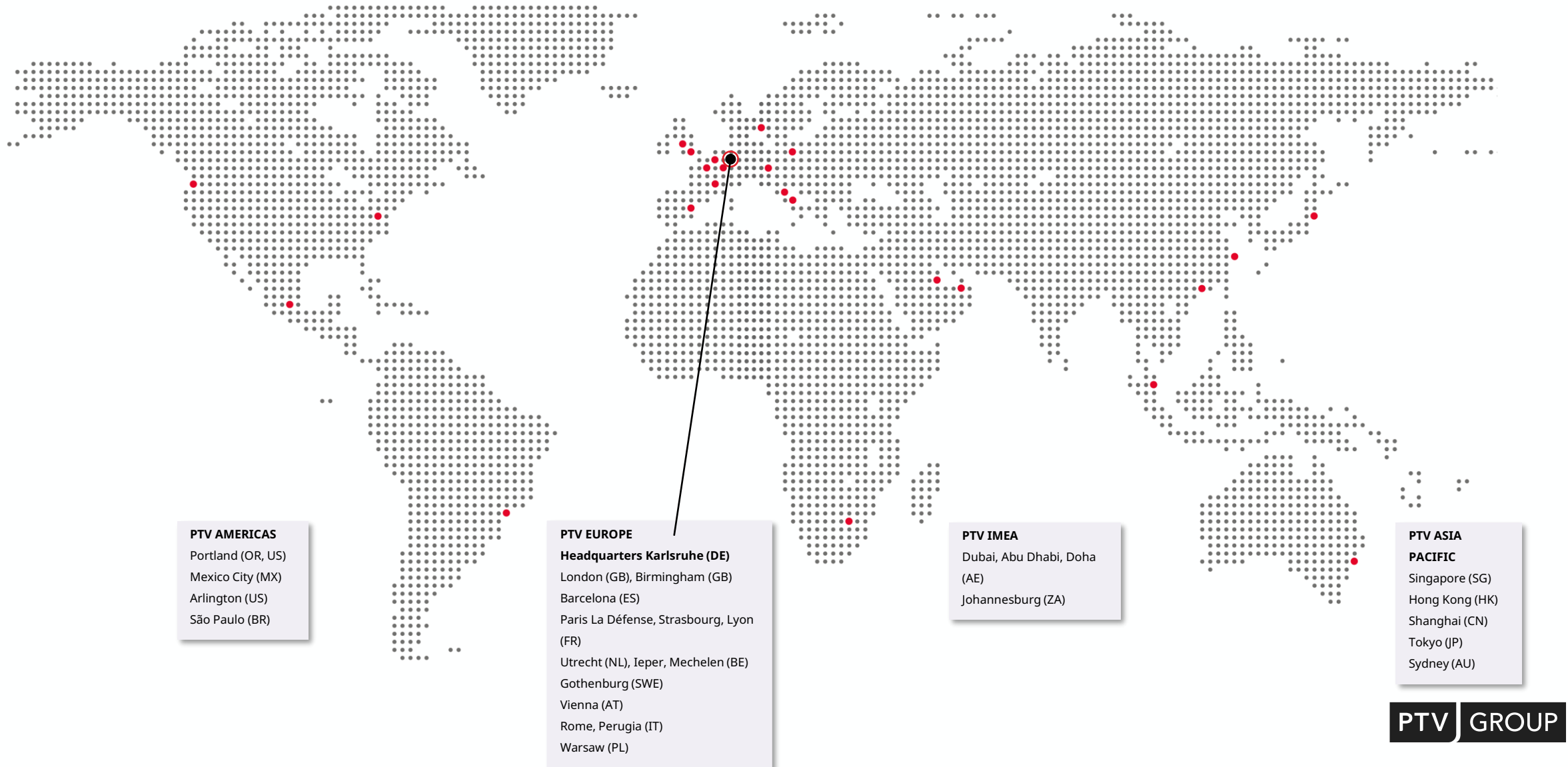
– >50,000 use PTV software (>2,500 cities)



Investors

– PTV is part of Bridgepoint and Porsche SE

Our global presence



Our segments

Mobility

Software for modeling and simulation
as well as planning and decision
making for the design of traffic
infrastructure

For the public sector, railroad &
public transport and consulting



Logistics

Software for planning and
optimization of "classical" logistics
processes

For industry, production, trade and
logistics



Data

Custom-tailored data solutions for a
broad variety of use cases and
software applications

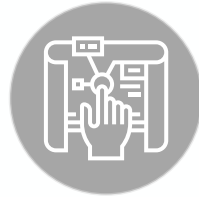
For retail, industry, logistics, research
institutes, consulting and many more



Our software expertise

Modelling and Simulating

Modelling and simulation of multimodal transport (macro- and microscopic)



Real-Time Traffic Management

Managing of intersections, corridors & entire traffic networks in real-time



Data-based visualization & analysis

Conception, visualization and analysis of data-based mobility problems for collaborative working



Route Optimization incl. Routing & Scheduling

Algorithms for highly complex multi-vehicle and multi-depot fleet optimization problems



Routeplanning for Trucks & Fleet Scheduling

Efficient truck route planning and transport cost calculation taking into account various restrictions



Field Force Planning

Analyze territories and locations and planning optimized routes for field service fleets



02

GEOSPATIAL DATA AT PTV



What is
„Data“?



'Without data, you're
just another person
with an opinion'

W. Edwards Deming



"OUR GEOSPATIAL COMPETENCE EMPOWERS YOUR BUSINESS
– INTERSECTORAL, INDEPENDENT, WORLDWIDE."

PTV Data

- 2021: DDS Digital Data Services GmbH is merged into PTV
- PTV Digital Data Suite is born

Market Leader

- We are the leading data provider and use our expertise for everybody who intends to use or offer geospatial data

PTV DATA

- Point
- Line
- Polygon





- A map says more than 1,000 excel spreadsheets!
- Detect agglomerations of high and low turnover
- Show origin, destination and volumes of commodity flows
- Assign and visualize delivery zones
- ...

PTV DATA

- Intersectoral
- Independent
- Global



At PTV we offer custom-tailored data products for a variety of clients:



**Data for
Logistics**



**Data for
Mobility**



**Data for Location
Intelligence**

A man with glasses and a woman in business attire are looking at a tablet together. The man is pointing at the screen with his finger.

WHAT IS DATA FOR LOGISTICS?

Value proposition

- Are used in operative, every day tasks
- Create transparency
- Grow trust in inter-corporate relationships
- Provide seamless software integration

Use cases

- Calculation of freight rates
- Support invoice audits
- Address cleansing
- Logistics site selection
- Business/Location Intelligence

WHAT IS DATA FOR MOBILITY?

Value proposition

- Target strategic usecases
- Increase trust in traffic models
- Accomplish and capitalise on customers' internal data

Usecases

- Calculation of local and regional traffic demand
- Help optimize the modal split and support sustainable mobility





WHAT IS DATA FOR LOCATION INTELLIGENCE?

Value proposition

- Target strategic usecases
- Increase trust in statistical models
- Accomplish and capitalise on customers' internal data
- Add "location" to business intelligence

Usecases

- Site selection
- Sales territory optimization
- Market analyses and predictive models
- Analyses of natural and political risks
- and many more

03

DATA AS A
SERVICE (DAAS)

DATA AS A SERVICE

DaaS is a modern way of data integration:

- High availability
- Easy to integrate
- Regular update cycles
- Flexible licensing



DATA AS A SERVICE

Our DaaS portfolio:

- Weather API
- Natural Risk Data WMS
- Air Quality Data API
- Aerial / Satellite imagery WMS
- Fuel Price Data API
- EWS Road Distance API
- and many more...

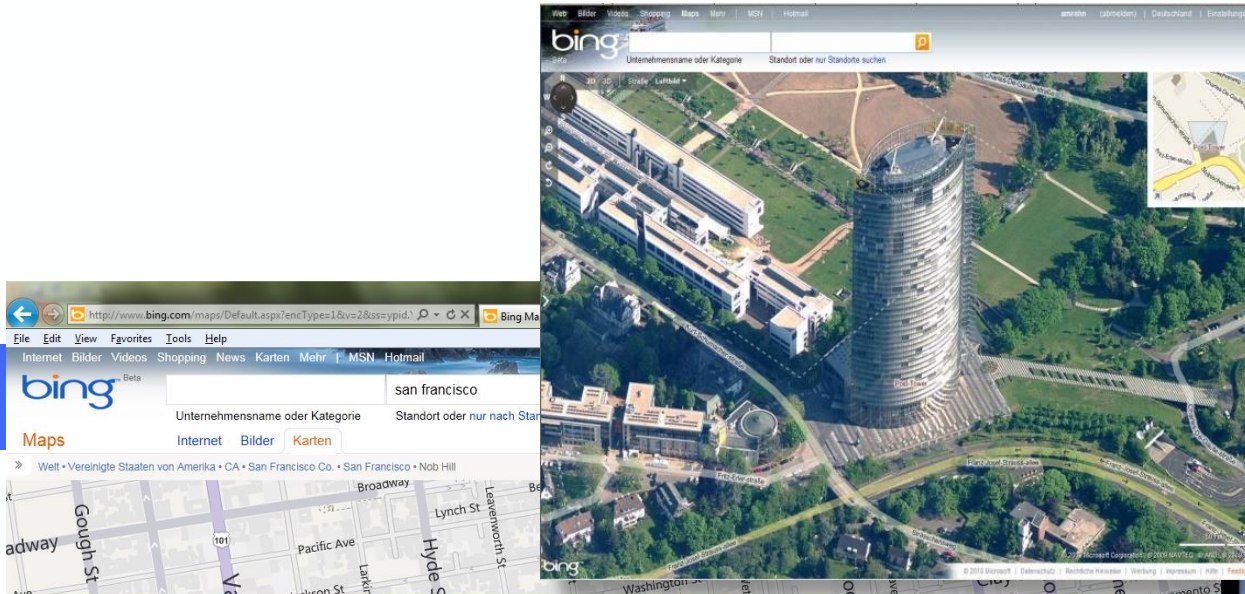


04



MICROSOFT BING MAPS DISTRIBUTION

BING MAPS DISTRIBUTION SINCE 2011





MICROSOFT BING MAPS CUSTOMERS

Web App Developers

- Store Locators
- Content Management Applications
- Business Travel Applications
- Precision Farming
- ...

CRM Applications

- Sales Territory Planning
- KPI Visualisation
- Sales Force Optimisation
- Appointment Planning
- ...

Mobile Asset Management

- Truck Routing
- (Small) Fleet Management
- Waste Management
- ...

Retail Applications

- Site selection
- Network analyses
- Expansion analytics
- Isochrone analyses
- ...

05

BING MAPS
CUSTOMER
USECASES

BING MAPS AT CM4ALL

Customer Voice

- Small business websites today serve as a hub for integrating a wide range of digital services.
- CM4all has integrated a variety of such services into its website building software, for example booking doctors' appointments, hotel reservations or job postings.
- The interactive route and location map is a must-have for many of our customers.



BING MAPS AT CM4ALL



Application:

CM4all Sites – a website building software with a focus on ease of use for non-technical users.

Target group:

Small and micro-entrepreneurs are the focus of our development. With the CM4all ecosystem, we want to make it as easy as possible for them to take the step towards integrated digitization.

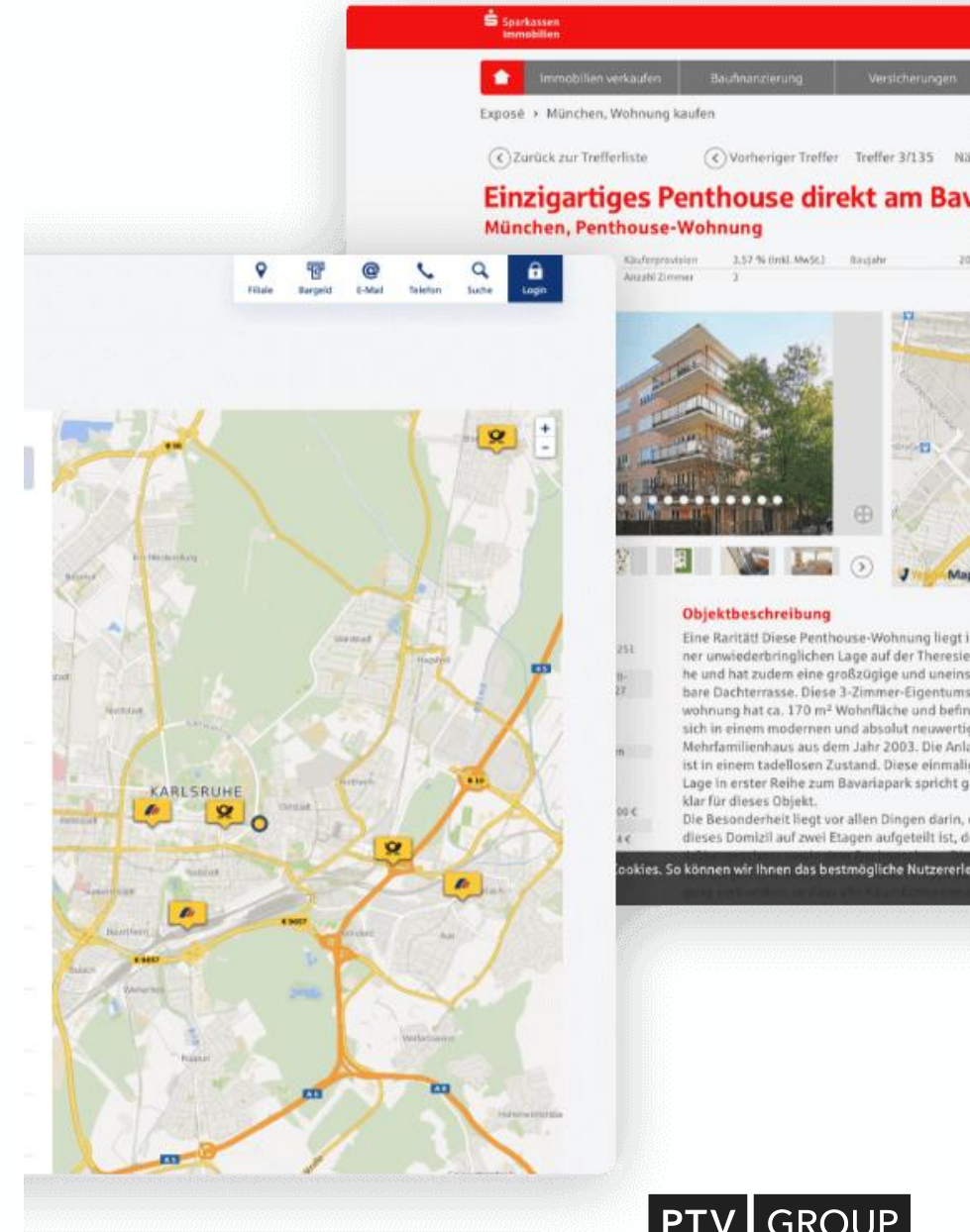
Functionalities:

We use Bing Maps as a widget within our software. Users can drag and drop a map into a page and configure it according to their requirements. Different layouts are available, so the map fits perfectly into their websites. Operation is simple & intuitive and requires no technical knowledge.

BING MAPS AT YELLOWMAP

Use case

- Location finder of all kinds: for websites (mobile or desktop), ATM finder, real estate finder, POI finder etc.
- Best possible allocation of resources (how to get there, modes of transport, territory divisions e.g., in sales) and much more



BING MAPS AT YELLOWMAP



Application:

YellowMap's Bing Maps applications can be used both as a ready-to-run application or built by customers themselves using our JS-API. There is a high level of freedom in both cases. Integration into a public website, use in an extranet solution, etc.

Target group:

YellowMap and its solutions provide services across all industries with a focus on the financial sector, insurance and retail.

Functionalities:

Proximity searches and calculations according to actual road kilometers, worldwide geocoding, display of satellite and aerial images, routing directions including calculation of travel time, ...

BING MAPS AT SMARTCRM



Use case

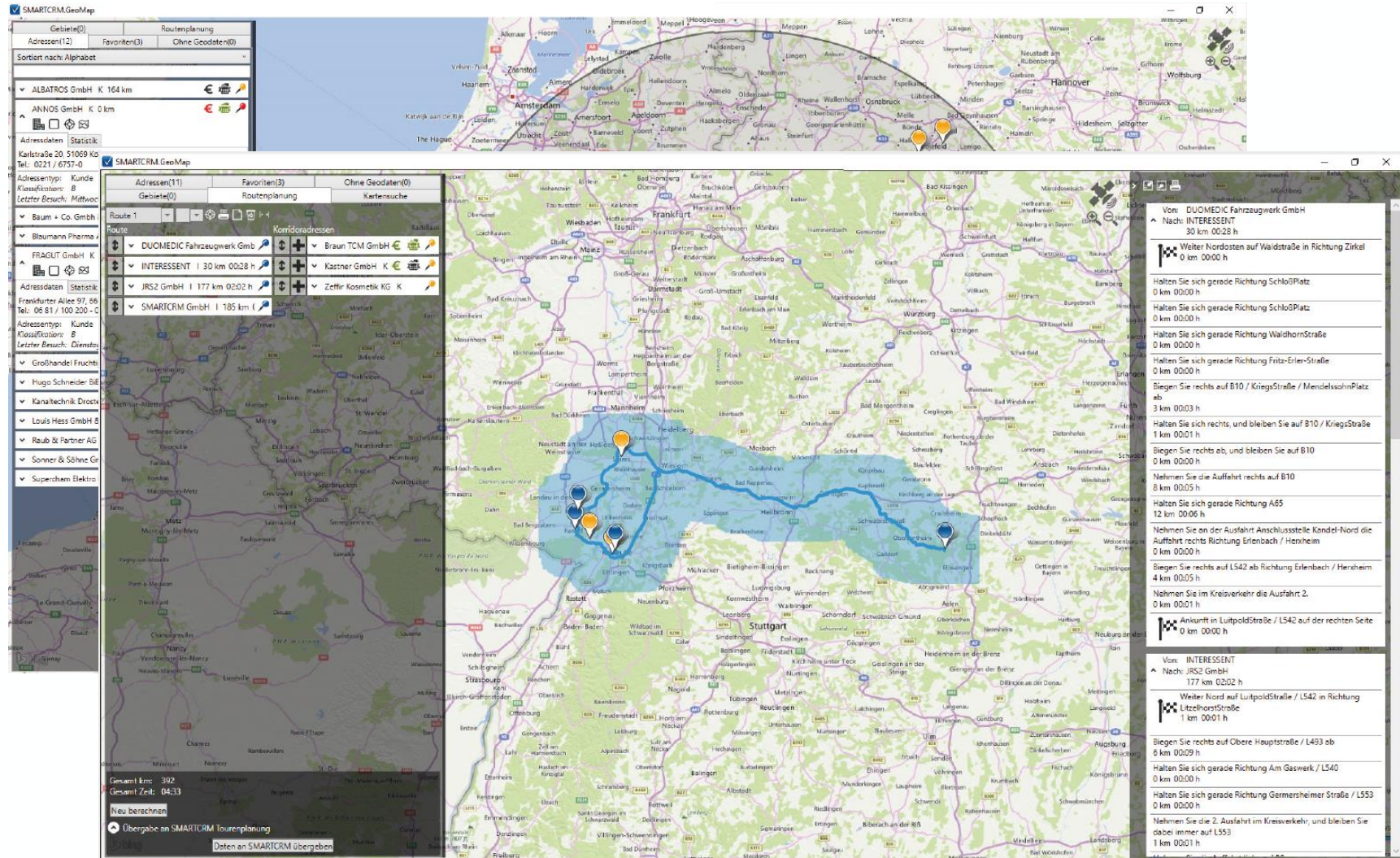
- Visit scheduling, for example on the basis of defined standard trips or also calendar weeks, etc. – in the sales and service fieldwork – transfer of addresses to Bing Maps, for example on the basis of the proximity search or a trip defined in SMARTCRM. This enables visualization of the locations, including display of classifications and statistical information.
- Also possible is the visualization of sales territories and route planning with the display of travel time and route details
- SMARTCRM includes the automatic generation of customer call appointments and planning activities or the assignment of addresses to trips

Application: SMARTCRM

Target group:
Medium-sized companies
from industry and the B2B
trade

Functionalities:

Automatic geocoding,
visualization of address
locations, route calculation



BING MAPS AT T.A.G. SOFTWARE GMBH

Use case:

Mobile Asset Management, Trip planning and route optimization – individually, or also in connection to existing systems

Application:

Via logis is a software product for trip planning and route optimization. An Excel interface is included as a standard interface, others are optional. Via logis also has a WebFleet telematics and TomTom navigation interface.

Target group:

All industries that have extremely dynamic trips or plan a high number of stops on their trips

Functionalities:

Geocoding, distances, truck routing

06

BING MAPS IN PTV PRODUCTS

BING MAPS IN PTV VISUM

The world's leading transport planning software

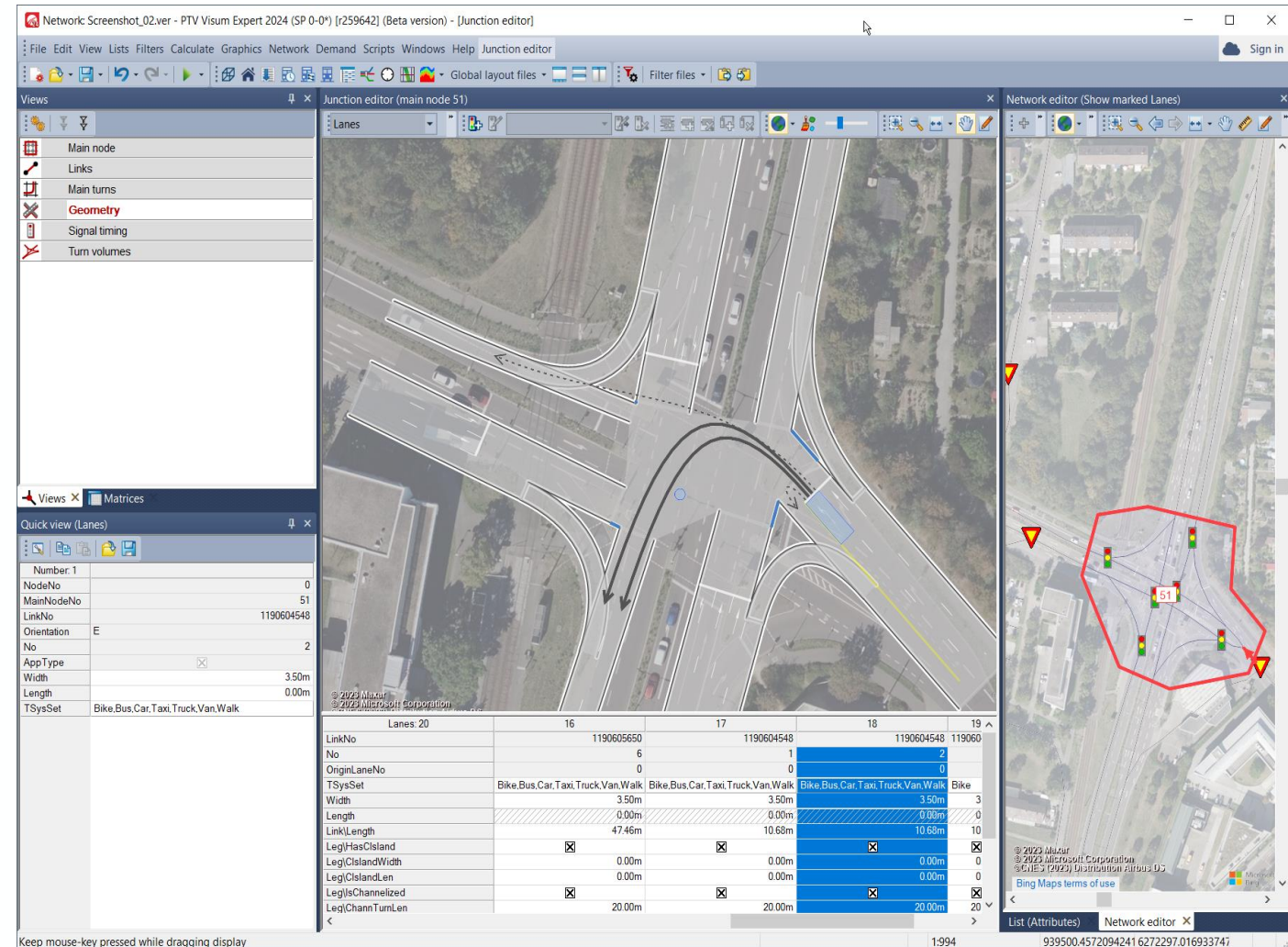
- PTV Visum is the standard for macroscopic simulations and modelling of transport network
- It covers transport demand modeling, public transport planning, and the development of transport strategies and solutions
- With PTV Visum, our clients create transportation models that provide insights for long-term strategic planning and short-term operational use



BING MAPS IN PTV VISUM

High-resolution aerial imagery as background map

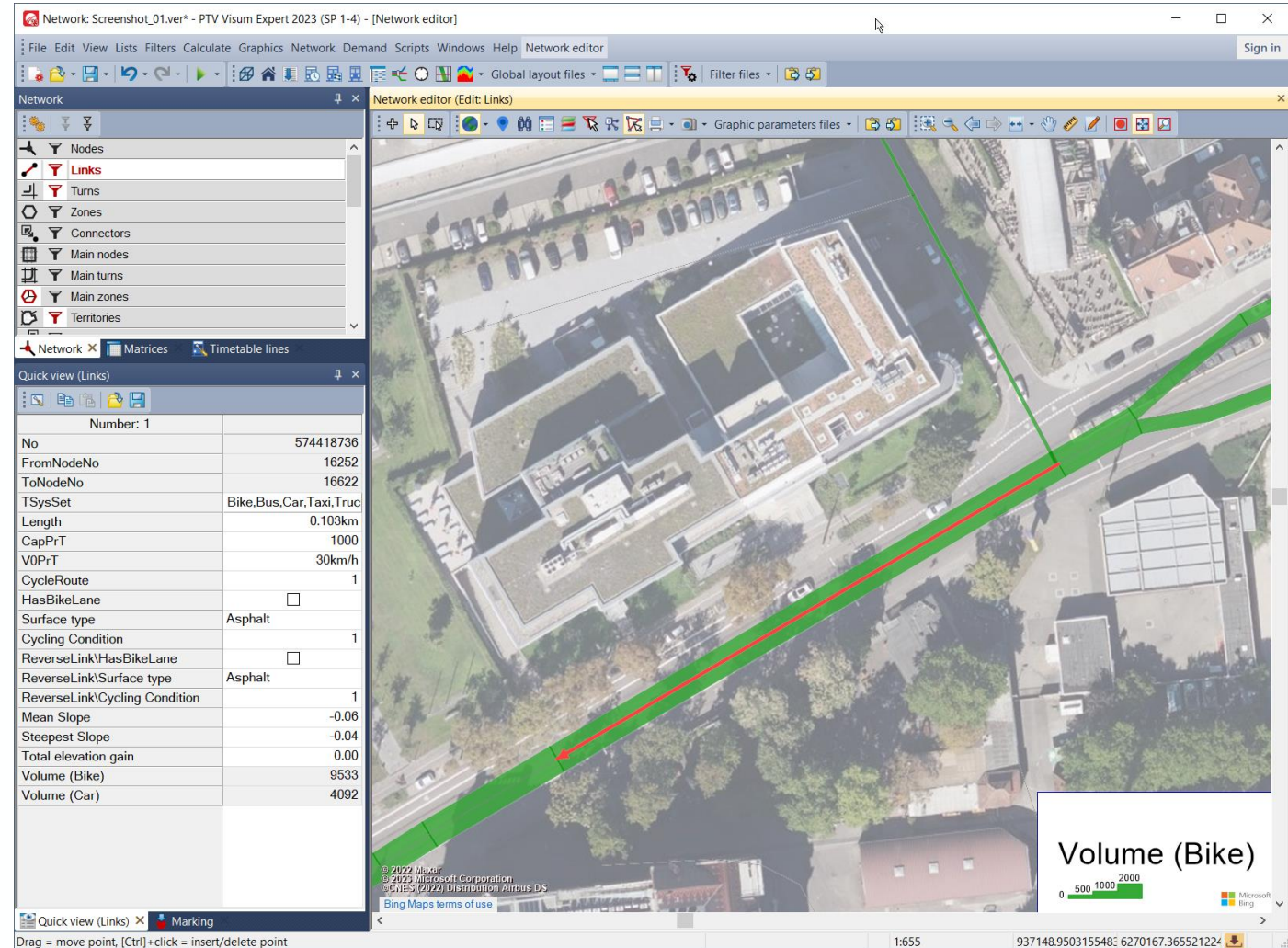
- Capture and validate junction layouts
- Lanes & turning movements
- Pockets & traffic islands
- Stopline position
- Crosswalks
- Widths, offsets



BING MAPS IN PTV VISUM

Capture and validate data on cycling infrastructure

- Bike lanes, markers, separation
- Surface types
- Parking
- Used for location quick search



BING MAPS IN PTV VISSIM

Multimodal Traffic Simulation Software

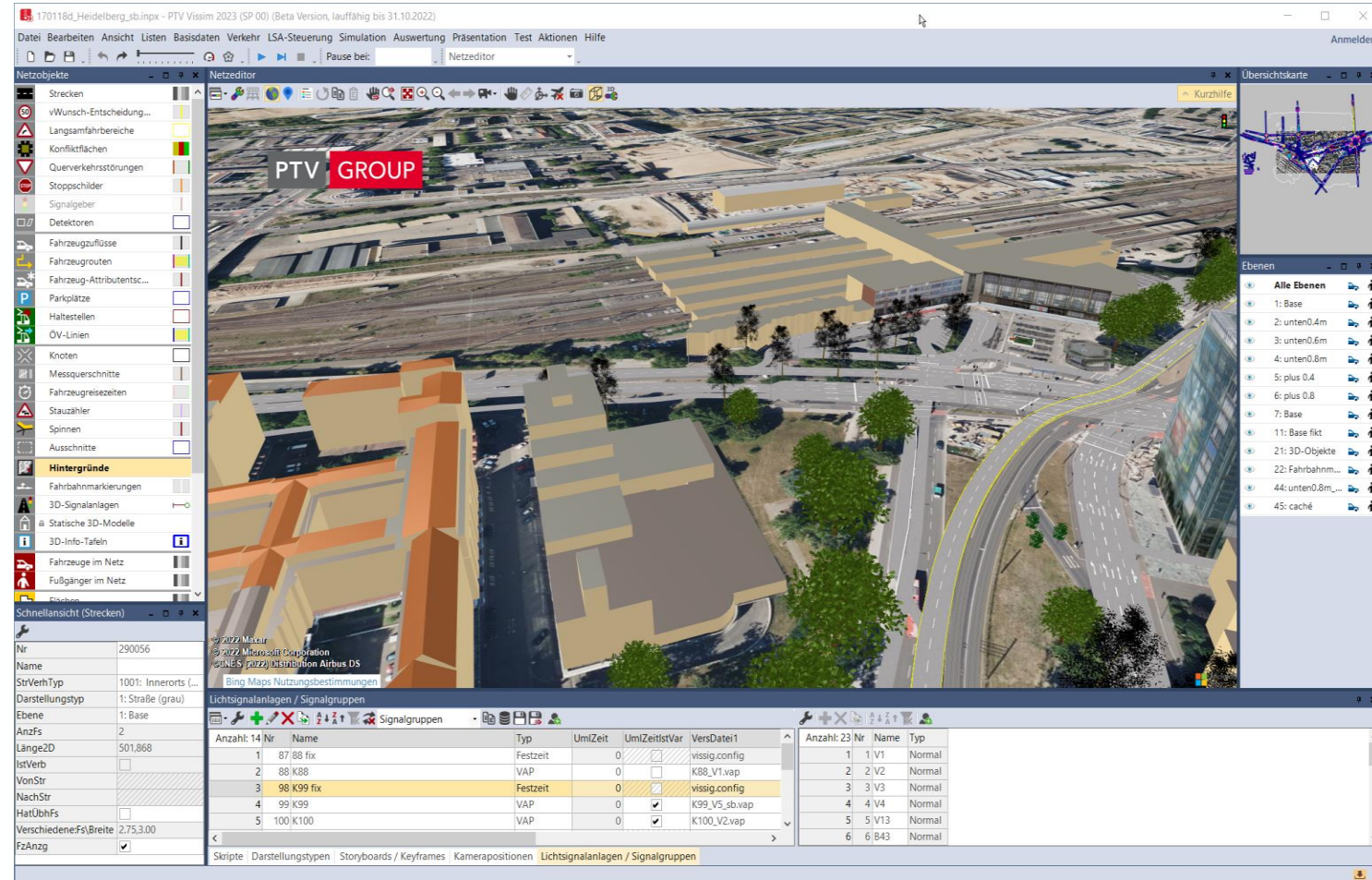
- The world's leading multimodal traffic simulation software PTV Vissim digitally reproduces the traffic patterns of all road users.
- PTV Vissim evaluates and improves the performance of traffic facilities.
- Results establish the basis for traffic planning decisions and address road traffic challenges, such as congestion and emissions.



BING MAPS IN PTV VISSIM

High-resolution aerial imagery as background map

- Capture and validate junction layout
- Provide context and orientation in 3D models

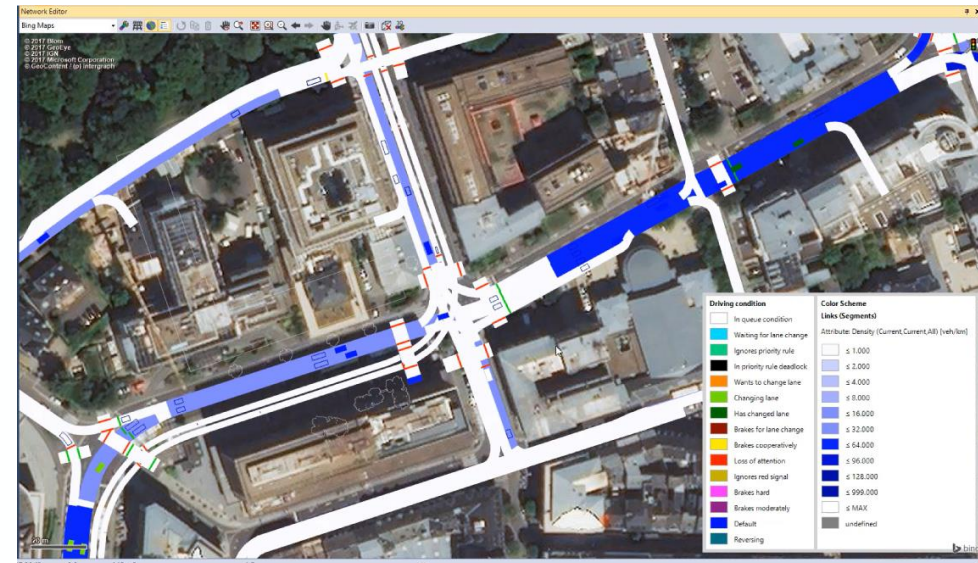
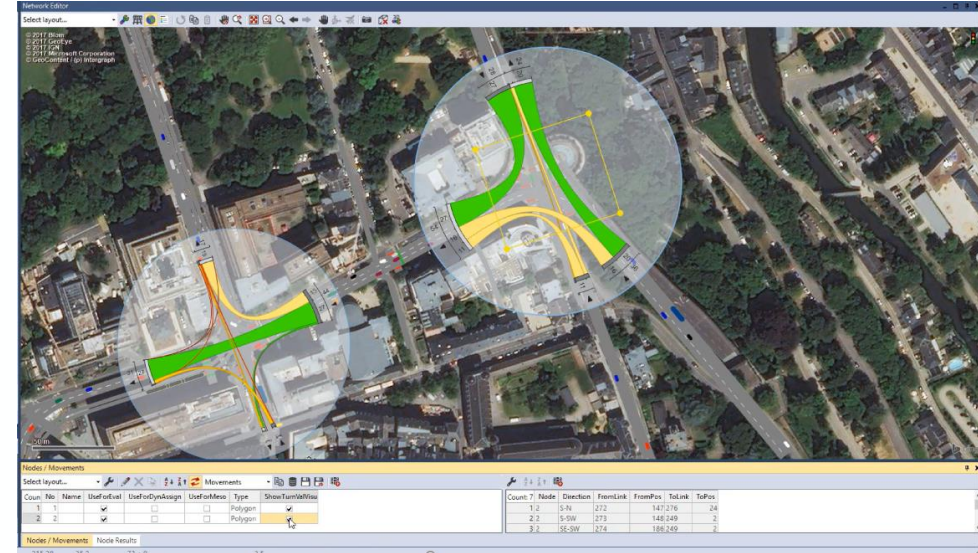


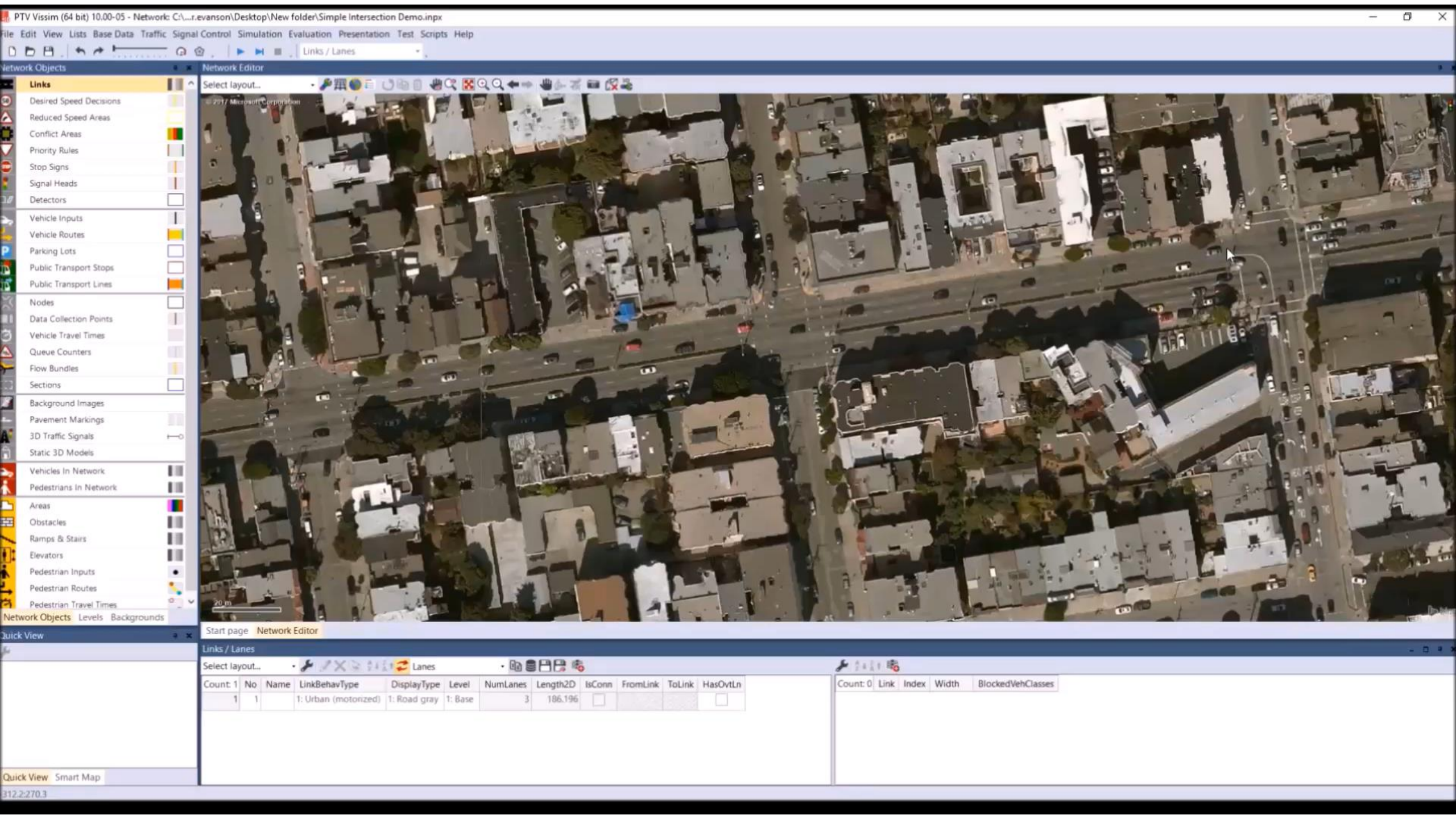
BING MAPS IN PTV VISSIM

High-resolution aerial imagery as background map

- Enrich images with powerful analyses and visualisations
- Background images provide intuitive reference

Use aerial imagery as basis for network build-up





Count: 1	No	Name	LinkBehavType	DisplayType	Level	NumLanes	Length2D	IsConn	FromLink	ToLink	HasOvtLn
1	1		1: Urban (motorized)	1: Road gray	1: Base	3	106.196	☐			☐

Count: 0	Link	Index	Width	BlockedVehClasses
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Global Market

More than 10,000
licences worldwide



North America

- Delaware Valley
- Atlanta
- Oregon
- New Mexico
- City of Winnipeg

Central & South America

- Peru
- Ecuador
- Bogota
- Medellin
- Mexico

Africa

- Johannesburg
- Cape Town
- Addis Ababa
- Mauritius

Asia

- Beijing
- Shanghai
- Shenzhen
- Hong Kong

Europe

- UK
- Italy
- Germany
- Paris
- Wales
- Barcelona

Middle East

- Dubai
- Abu Dhabi
- Sharjah
- Qatar

Australia

- Victoria
- Queensland

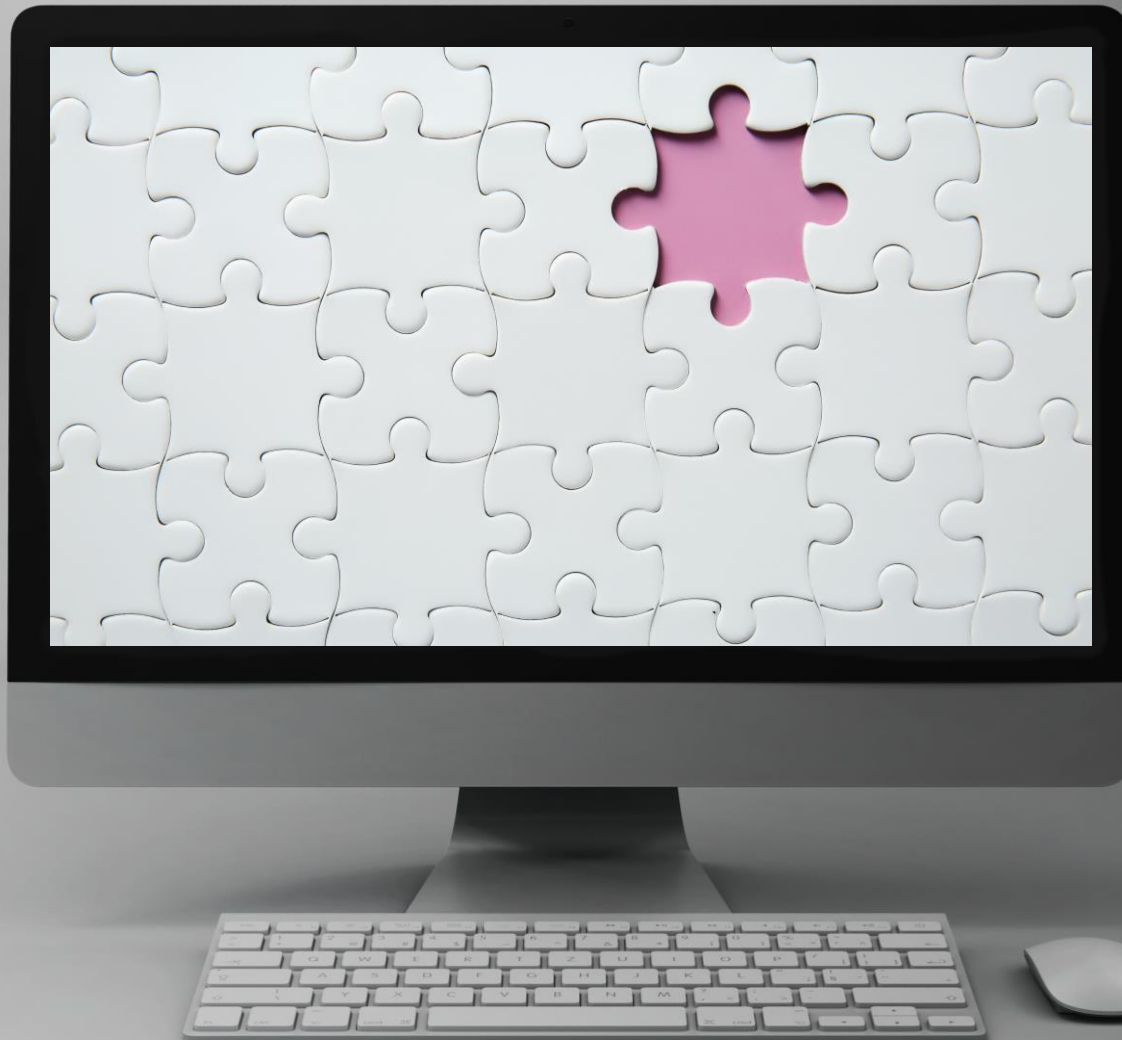
- Philippines
- Kuala Lumpur
- Singapore

07

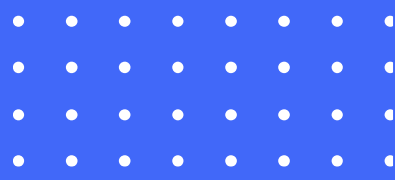


OUTLOOK

OUTLOOK



- Combination of various DaaS offerings
- Vector vs. Raster data
- WMS / WMTS vs. APIs
- Public vs. Private Cloud
- ...



PTV GROUP

LET'S TALK



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