

A wide-angle photograph of a city skyline at sunset. The sun is low on the horizon, casting a golden glow over the buildings and the sky. In the foreground, a multi-lane highway with a central median runs towards the city. The road surface is dark, and there are some light trails from vehicles. The buildings in the background are a mix of modern glass skyscrapers and older, more traditional structures. The overall atmosphere is serene and urban.


# Pollution-sensitive traffic management with PTV Optima and Bosch Air quality solutions

Intertraffic Summit 2024

# Agenda

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- Introduction
- Solution and application
- Sneak peek of the future

An aerial photograph of a city skyline, likely New York City, taken from a high vantage point. The sun is low on the horizon, creating a warm, golden glow over the city. The sky is a clear, deep blue. The city is densely packed with buildings of various heights and colors. In the foreground, several prominent skyscrapers are visible, including one with a distinctive golden spire. The text "It is found that there are significant positive correlation between air quality and quality of life" is overlaid in white, bold, sans-serif font across the center of the image.

It is found that there are  
significant positive correlation  
between air quality and  
quality of life

## Road to a cleaner traffic

- Pollution share from road transport in 2016
  - CO<sub>2</sub>: 23%
  - NO<sub>x</sub>: 30%
  - PM<sub>2.5</sub>: 12%
- EU is committed to fight GHG emissions and pollution emissions
  - Many measures already had positive impacts

Source: European Environment Agency





**We aim to support the path  
toward a sustainable traffic**



# PTV Optima

Traffic information

Traffic propagation

Traffic forecast

Decision support

Strategy distribution



# PTV OPTIMA

## Input

Detector data  
Floating Car/Mobile Data  
Traffic reports  
Roadworks  
Networks  
OD Matrices

## Capabilities

Data Fusion  
Estimation of Traffic Situation  
Forecast and Scenarios  
Incident Management  
Detection Management  
Route guidance

## Output

Situation awareness  
Decision support  
Visualization UI  
Dynamic route guidance  
Passenger information  
VMS and other dynamic signs

Search in the system

**SYSTEM INFO**

NETWORK	York(demo)
TIMEZONE	Europe/London
MODE	Real Time
PUT	YES
NODES	11012

**PLANNING FORECAST**

STATUS: **Waiting**

MESSAGE: --

LAST SIMULATION: --

NEXT SIMULATION: ----

Evaluate

**SYSTEM LOG**

- KLog [Web Socket] Updates from map-layer queue "optima\_kpi" 09:04:02
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WORKSPACES

MAP

KPI DASHBOARD

SCENARIO

ADMIN PANEL



## OPTIMA PLANNING SCENARIO



CREATE ▾

QUEUE ▲

Planning forecast - status: Waiting (0%)

GROUP ID	DESCRIPTION	STATUS
26	Roadworks Jan 2024	Completed
25	Clifton + Buxton roadworks November	Completed
24	Clifton Road 2	Completed
23	Clifton Road	Completed
22	Skeldergate comparisons	Completed
20	Maintenance+Rerouting_Ring Road_v2	Completed
19	Maintenance+Rerouting_Ring Road	Completed
17	test_chlaar	Completed
15	AccidentA64_NB_WD_0730-1230	Completed
14	Accident_A64EB_WD_1130-1430	Completed
3	Fulford-HospitalFields_WD_0730-1030	Completed
2	HorseRaces_attr_WE_0930-1100	Completed
1	SkeldergateClosure_WD_0900-1200	Completed

DATA RESULTS ▾



## BOSCH AIR QUALITY SOLUTIONS

### **Air Quality Sensors**

Cloud connected  
High frequency sensors

### **Live Traffic Emission**

Cloud computing  
High res estimates (20m)  
Live traffic data

### **Dispersion Heatmaps**

3D modelling  
High res model (5m)  
Weather data

# Solution



- Data location
- Different pollutants
- Custom thresholds
- Sensor quick view
- Sensor readings

# Application



- KPI
- Detection and control
  - Alerts
  - Automation

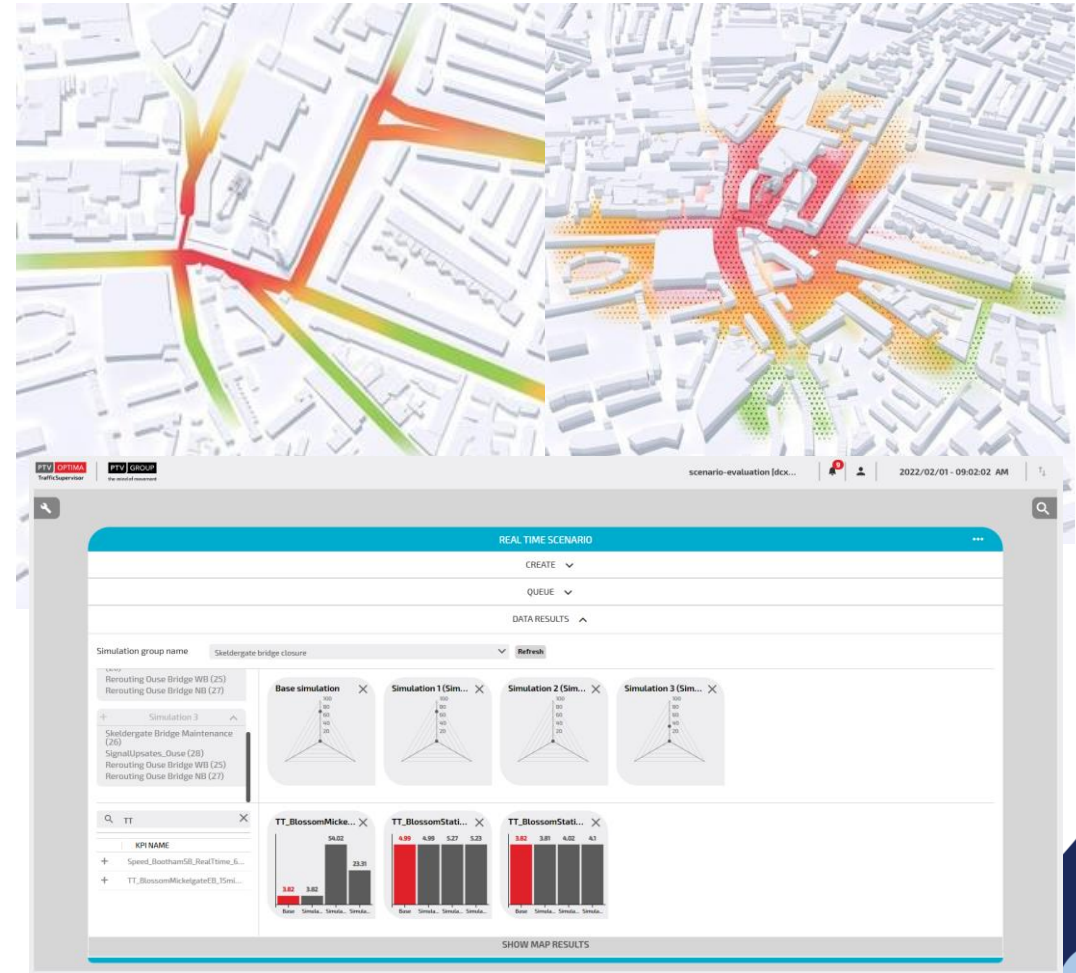


# SNEAK PEEK OF THE FUTURE

# Emission and dispersion computation from PTV Optima traffic

## Using Bosch ESTM API

- Network-wide traffic emissions
- Network-wide traffic dispersions
- Live traffic emissions
- Simulated scenario emissions
- Global and area-specific KPI
- Automatic alerts and actions





**Operate traffic responsibly**

